THE NEW MECHANICAL RUBBER CORPORATION.

Charter and Preliminary Organization.

AT half-past 8 in the forenoon of October 17, the appended articles of incorporation, duly sworn to, were filed for record in the Clerk's office of the County of Passaic, at Passaic, N. J., and they were subsequently recorded in Book D of Certificates for said county, on pages 235 and following; and they were on the same date filed in the office of the Secretary of State of New Jersey, at Trenton:

CERTIFICATE OF ORGANIZATION OF THE MECHANICAL RUBBER COMPANY.

WE, the undersigned, William Barbour, John P. Townsend, Henry W. Cannon, James B. Ford, and David H. King, Jr., do hereby associate ourselves into a Company under and by virtue of the provisions of an act of the Legislature of the State of New Jersey, entitled "An Act Concerning Corporations," approved April 7, 1875, and the several supplements thereto and acts amendatory thereof, for the purposes hereinafter mentioned, and we do hereby assume to and for said Company all the rights, powers and privileges granted to and conferred upon corporations by the Laws of the said State of New Jersey, and do hereby certify and set forth as follows:

I. The name assumed to designate such Company and to be used in its business and dealings is "The Mechanical Rubber Company."

II. The places in the State of New Jersey where the business of said Company is to be conducted are the city of Passaic in the county of Passaic, and also those other cities, towns and villages in said State in which said Company may hereafter deem it expedient to conduct its business, and the city and county in which the principal part of the business of said Company within said State is to be transacted and conducted is the said city of Passaic in the county of Passaic. The part of the business of the said Company to be carried on without the said State of New Jersey is as hereinafter stated. The city, county and State in which the principal office or place of business of the said Company, out of the State of New Jersey, is to be situated, is the city, county and State of New York, and the said company also proposes to have business offices in the cities of Boston, Massachusetts, Chicago, Illinois, and Cleveland, Ohio, and intends to carry on operations in all of the States and Territories of the United States of America and in Great Britain, France, Germany, the Dominion of Canada, and other foreign countries.

The objects for which the said Company is formed are the making, purchasing and selling India-rubber goods, appliances and apparatus for mechanical and all other purposes and as well all goods of which rubber is a component part, and the various materials entering into the manufacture of any such goods, appliances and apparatus, and also the acquiring and disposing of rights to make and use any and all such goods, appliances, apparatus and materials, and also the making, purchasing and selling all and any other goods, appliances and apparatus, and the doing and transacting all acts, business and things incident to or relating to or convenient in carrying out its business as aforesaid, which are permitted by law.

The portion of the said Company's business which is to be carried on out of the State of New Jersey is its financial business generally and as well such portion of its manufacturing business and the business of buying and selling, as it may from time to time find convenient. A portion of its business of manufacture, as well as of buying and selling is to be carried on in the cities of Boston, Massachusetts, Chicago, Illinois, and Cleveland, Ohio.

III. The total amount of the capital stock of said Company is $15,000,000. The number of shares into which the same is divided is 150,000, and the par value of each share is $100. The stock of the said Company is to be of two kinds, to wit, general stock and preferred stock. The amount of the preferred stock is to be $6,000,000, or 60,000 shares, and that of the general stock, $9,000,000, or 90,000 shares.

The holders of the preferred shall be entitled to receive semi-annually all net earnings of the Company, determined and declared as dividends in each fiscal year, up to but not exceeding 8 per cent. per annum, upon all outstanding preferred stock before any dividend shall be set apart or paid on the general stock, but such dividend upon the preferred stock shall not be cumulative, and the preferred stock shall not be entitled to participate in any other or additional earnings or profits. In case of liquidation or dissolution of the company, the holders of preferred stock shall be entitled to receive cash to the amount of their preferred stock at par before any payment in liquidation is made upon the general stock and shall not thereafter participate in any of the property of the company or proceeds of liquidation. The amount with which the said company is to commence business is the sum of $5000, divided into fifty shares of the par value of $100 each, of which twenty-five shares are to be preferred and the remaining twenty-five shares general stock. Additional issues on account of the total authorized capital stock, preferred and general, may be made, from time to time, in such sums and in such manner as the Board of Directors of the Company may determine, and in accordance with law and with this certificate.

IV. The names and residences of the stockholders and the number of shares held by each are as follows:

NAMES.	Residences.	Number of Shares. General.	Preferred.
William Barbour,	Paterson, N. J.	5	5
John P. Townsend,	New York, N. Y.	5	5
Henry W. Cannon,	New York, N. Y.	5	5
James B. Ford,	New York, N. Y.	5	5
David H. King, Jr.,	New York, N. Y.	5	5
Total shares,		25	25

V. The period at which the said Company shall commence shall be the fifteenth day of October, 1892, and the said Company shall terminate on the fifteenth day of October, 1942.

In witness whereof, we have hereunto affixed our hands and seals respectively this fourteenth day of October, in the year one thousand eight hundred and ninety-two.

WM. BARBOUR, [L. S.]
JOHN P. TOWNSEND, [L. S.]
H. W. CANNON, [L. S.]
JAMES B. FORD, [L. S.]
DAVID H. KING, JR., [L. S.]

Signed, sealed and delivered in the presence of EDWARD CORNELL.

On the afternoon of October 17 a meeting of all the incorporators above named was held at Jersey City, N. J., when the preliminary organization of the company was

effected by the adoption of by-laws and the election of a board of directors, as follows:

William Barbour, of the Barbour Brothers, thread manufacturers, Paterson, N. J., and New York city.
Henry W. Cannon, president Chase National Bank, New York.
Oliver S. Carter, president National Bank of the Republic, New York.
James B. Ford, treasurer Meyer Rubber Co., New Brunswick, N. J.
Henry L. Hotchkiss, president L. Candee & Co., New Haven, Conn.
D. H. King, Jr., contractor and builder, New York.
M. C. Martin, president New Jersey Rubber Shoe Co.
J. Edward Simmons, president Fourth National Bank, New York.
John P. Townsend, president Knickerbocker Trust Co., New York.
Ebenezer K. Wright, president National Park Bank, New York.

William Barbour is a member of Barbour Brothers and Co., the extensive manufacturers of linen thread. He is a director of the National Bank of the Republic, in New York.

John P. Townsend was formerly president of the New York Maritime Exchange and a prominent member of the Produce Exchange. He is now President of the Knickerbocker Trust Co.

Henry W. Cannon is President of the Chase National Bank of New York and was formerly Comptroller of the Currency of the United States. He is one of the representatives from the United States to the International Monetary Conference, which assembles soon in Brussels.

James B. Ford does not need further introduction to the rubber trade than to be mentioned as the treasurer of the Meyer Rubber Co.

David H. King, Jr., is a builder. He erected the Equitable building, one of the most imposing business structures in the world. He built the pedestal for the Statue of Liberty, and is erecting the new *Herald* building.

While the organization of the company has not been perfected, it may be stated with confidence that John H. Cheever will be president; L. K. McClymonds first vice-president and general manager, and August Belmont, treasurer. The actual management will be in the hands of Mr. McClymonds, who has given up his home in Cleveland, Ohio, and settled permanently in New York. He was president of the Cleveland Rubber Co., and regarded as one of the ablest men in the mechanical rubber trade. His father, who is in his eighty-sixth year, takes an active part in the affairs of the Cleveland company. Mr. Cheever, as everybody knows, is president of the New York Belting and Packing Co. He has done the principal business in mechanical rubber goods for fifty years. Mr. Belmont is the head of the banking firm of August Belmont & Co., who are the New York agents of the Rothschilds.

It is asserted by the promoters that the United Mechanical Co. will control 60 per cent. of the trade in mechanical rubber goods. They will absorb concerns in New York, Boston, Connecticut, New Jersey, Cleveland, and Chicago. They will establish factories to produce materials used in rubber goods which they cannot purchase to better advantage.

The new mechanical company have established temporary headquarters in New York over the office of the New York Belting and Packing Co., at No. 15 Park row. L. K. McClymonds, the general manager of the new company, has removed from Cleveland, Ohio, to New York to assume charge of the business affairs of the new corporation. It is presumed that within a few days the final details of the organization will have been completed.

THE SHOE COMBINATION PERFECTED.

Offer of Stock to the Public.

THE organization of the United States Rubber Co., recently incorporated under the laws of New Jersey, was completed at a meeting of stock-holders on October 15, at the chief offices of the company, No. 16 William street, New York city. The directorate chosen represents each of the rubber companies absorbed by the new corporation, together with several other gentlemen sustaining important financial relations with the organization. The names follow:

Charles A. Coffin, president General Electric Co., Boston, Mass.
Samuel P. Colt, president National India Rubber Co., Providence, R. I.
James Deshler, secretary New Jersey Rubber Shoe Co., New Brunswick, N. J.
Robert D. Evans, president American Rubber Co., Boston.
James B. Ford, treasurer Meyer Rubber Co., New York.
Charles R. Flint, of Messrs. Flint & Co., New York.
J. Howard Ford, president Meyer Rubber Co., New York.
Robert M. Gallaway, president Merchants' National Bank, New York.
William H. Hill, of Messrs. Richardson, Hill & Co., Boston.
Henry L. Hotchkiss, president L. Candee & Co., New Haven, Conn.
H. B. Hollins, of Messrs. H. B. Hollins & Co., New York.
George H. Hood, president Boston Rubber Co.
Charles L. Johnson, treasurer L. Candee & Co., New Haven, Conn.
James P. Langdon, president New Brunswick Rubber Co., New Brunswick, N. J.
George A. Lewis, president Goodyear's Metallic Rubber Shoe Co., Naugatuck, Conn.
Edwin A. Lewis, director Goodyear's Metallic Rubber Shoe Co.
M. C. Martin, president and treasurer New Jersey Rubber Shoe Co. New York.
Frederick M. Sheppard, president Goodyear Rubber Company and Rubber Clothing Co., New York.
Richard C. Sibley, Equitable Building, New York.
J. Edward Simmons, president Fourth National Bank of New York.
William L. Trenholm, president American Surety Co., New York.
John P. Townsend, president Knickerbocker Trust Co., of New York.
Charles E. Thayer, Boston.
John I. Waterbury, vice-president Manhattan Trust Co., of New York.
Samuel N. Williams, treasurer Lycoming Rubber Co., Williamsport, Penn.

The officers elected were Robert D. Evans, president; James B. Ford, vice-president; Charles R. Flint, treasurer; M. C. Martin, assistant treasurer; and John I. Waterbury, secretary. An executive committee was named, the members of which have duties assigned to them as stated below:

Henry L. Hotchkiss, director of purchasing crude rubber.
Robert D. Evans, director of purchasing and manufacturing raw material.
George A. Lewis, director of manufacturing boots and shoes.
Charles L. Johnson, director of sales.
Samuel P. Colt, director of patents and legal affairs.
Charles R. Flint and M. C. Martin, directors of finance.

Under date of October 27 a prospectus was issued from New York and Boston, announcing an issue of capital to that date of $26,947,000, and the completion of negotia-

tions for the purchase or permanent control of nine concerns manufacturing rubber boots and shoes, namely :

American Rubber Co., Boston.
Boston Rubber Co., Boston.
L. Candee & Co., New Haven, Conn.
Goodyear's Metallic Rubber Shoe Co., Naugatuck, Conn.
Lycoming Rubber Co., Williamsport, Pa.
Meyer Rubber Co., New Brunswick, N. J.
National India Rubber Co., Bristol, R. I.
New Brunswick Rubber Co., New Brunswick, N. J.
New Jersey Rubber Shoe Co., New Brunswick, N. J.

In addition to these properties, the property of the Pará Rubber Co. has been acquired, and contracts have been made for the control of two other rubber boot-and-shoe properties.

Subscriptions were invited for $10,500,000 of preferred stock, entitled to a preferential dividend of 8 per cent. per annum, declared out of the net earnings of each year, in shares of $100 at $102.50 per share. The present issued capital is divided into 134,735 shares each of preferred and common stock. Books for subscriptions were opened in the two cities named on November 2, and closed on November 4.

To quote further from the company's prospectus, the earnings remaining in any year after the payment of 8 per cent. on the preferred stock belong to the common stock. The preferred stock will also have priority over the common stock in respect to all property or assets of the company in case of liquidation. The by-laws provide for the payment of dividends on the first days of May and November. The company has no bonded or mortgage debt, and the creation of any such debt, except with the consent of the holders of record of at least three-fourths of all issued capital stock of each class, is prohibited by by-law, which by-law cannot be changed or amended except by like consent. The preferred stock offered is issued full paid and unassessable, and carries no personal liability to the shareholder. It has full voting power.

"The account for ten years past of each of the above-mentioned companies (except two of them which have not existed for that time and as to these for the period of three years last past) have been examined by Messrs. Henry T. Bragg and John C. Marin, accountants, of this [New York] city, who have certified that their business during that period shows an average yearly profit of 13 9-10 per cent. upon the aggregate capital employed. A special examination of the past year, during which the companies were opposed in interest and operated under large and unnecessary expense, which this organization will obviate in a great degree, shows an aggregate profit (before paying interest on borrowed money—an expense which should no longer be necessary under this union of interests) in excess of the amount necessary to pay 8 per cent. upon the present issue of the preferred stock. By introduction of economies contemplated, and through the additional productive capacity of all the several plants,—due to coöperation and the common use of secrets in manufacturing as hereinafter pointed out,—the company will, while offering to the consumer as cheap, if not a cheaper product, be able very materially to increase both earnings and profits."

"The manufacture of rubber boots and shoes . . . is an industry wholly protected by brands or trade-marks, in part by patents and largely by secret processes, and requires very large capital, extensive plant, great experience, and long-established reputation and good-will for successful operation. As a result, all attempts with simply large capital to create profitable concerns have been abortive, and the whole industry in the United States remains, as stated, centered in fifteen properties alone.

"Each of the above-named companies has heretofore, as against the others, possessed special advantages in the matter of trade secrets involving chemical compounds, without the fullest knowledge of which successful manufacture is impossible. Under the present management all such information will be used for the common benefit. The economies thus resulting will necessarily add largely to the profits of the company.

"To this saving should be added that of securing at the lowest possible cost, by large purchases or by independent manufacture, crude materials entering into the manufactured articles. The demoralization and financial loss resulting from spasmodic manufacture and the carrying of an excessive stock of manufactured goods and crude materials will be avoided. The manufacture will be simplified and classified, and saving will be made in the matter of interest charges, in insurance, and in selling expenses.

"The exclusive benefit of the skill and experience of the managers of the several properties is insured to this company by suitable contracts.

"The common stock remains in the possession of those interested in the property and management.

"The properties secured to the United States Rubber Co. (other than the Pará plant) have each been appraised by Charles S. Smith, president New York Chamber of Commerce; Henry W. Cannon, president Chase National Bank, New York city; and Charles H. Dalton, manufacturer, of Boston, Mass.

"The value of these properties as thus fixed (which is less than their cost), together with the purchase price of the Pará plant and cash and other assets in the treasury of the company, together with available assets over liabilities, as examined and certified to by the above-named accountants and guaranteed by the several manufacturers, is equal to the par of the total present issue of preferred stock, without consideration of good-will, trade marks, or other assets."

Economies of management are promised under the combination. The work of manufacture will be simplified by classifying production at the mills, each mill turning out but one kind of goods instead of all kinds, as at present. The promoters of the new company have figured out a yearly saving of $2,650,000, or 19 per cent. on the present issue of 134,735 shares of common stock. This is to be done without reducing wages or advancing prices and while improving the quality of goods.

It is stated that about 50,000,000 pairs of rubber boots and shoes were made in this country last year, when sales reached $27,000,000. The stocks carried by the several companies amounted in value to $6,000,000. An average stock of $1,500,000 is thought ample for immediate wants of the trade. This means a saving in interest, insurance, and depreciation equal to 10 per cent. on $4,500,000, or $450,000. It is estimated that $160,000, being 8 per cent. interest on $2,000,000, will be saved in reduction of material and stock, and $120,000 in reduction of lasts. Selling expenses, including catalogues, advertising, clerk and store hire, have amounted to $700,000 yearly for the separate establishments. It is said that $400,000 of this can be saved by combination. Material cost $10,000,000 when

twelve bidders were in the field. With buying under one control a saving of $400,000 is figured out.

An improved classification of labor, possible under consolidation, promises to save $250,000, while not disbursing wages, and from the increased productive capacity of plants under the organized system, with less cost for maintenance and insurance and less depreciation, a saving of $120,000 is expected.

A saving of $750,000 is looked for in the purchase of crude rubber. The new company expects to control lines of transportation on the Amazon and to get the benefit of other facilities not heretofore possible in the purchase of crude rubber.

The subscriptions to the stock of the United States Rubber Co. are announced to have exceeded the amount offered to the public. The smaller subscribers will receive the full amounts applied for and the allotments to the larger ones will be reduced. The stock is said to be widely distributed. By the sale of stock the company will be provided with a large sum of money. A portion of the money will be used to build factories for the production of materials used in rubber boots and shoes. There is information that a contract has already been let for a factory which will cost $300,000.

In the management of the affairs of the company the same system will be adopted as formerly existed under the Standard Oil Trust. The business will be divided into departments, the heads of which will report to an executive committee having in charge the general policy.

The principal offices of the United States Rubber Co., as already noted, will be in New York, at No. 16 William street, where President Evans and a good office force will be found. In Boston they have secured the large room on the first floor of the Shoe and Leather Exchange building, on Bedford street. This room, which was intended for a general exchange meeting room, has not been patronized sufficiently to warrant the officers of the Exchange in holding it for this purpose, and it affords specially desirable accommodations for the business of the United States Rubber Co. It will be divided up to suit the wants of the heads of the different departments as well as providing private offices and suitable accommodations for bookkeepers, typewriters, and clerks.

The three appraisers of the plants "taken over" by the United States Rubber Co. were Charles S. Smith, president of the Chamber of Commerce of New York; Henry W. Cannon, president of the Chase National Bank of New York; and Charles H. Dalton of the Arkwright Club of Boston, the leading manufacturers' organization of New England. They had the power to appoint experts and named E. W. Bickford, superintendent of the Boston Rubber Shoe Co.; A. C. Whittier, of the Whittier Machine Co. of Boston, and George F. Barrus, of Boston, an authority in construction and power. The appraisers sent forms to the managers of the different plants asking for details as to production, machinery, power, and general equipment. The experts with the schedules in hand visited the plants and made up a report covering over a thousand pages. Then the three appraisers in company with the experts visited the plants. The larger plants were visited several times. The appraisers finally met in New York with the experts and fixed a valuation for each plant. The aggregate valuation is said to have been less than the actual cost of the properties. Some of the plants were paid for in cash and others in stock. In some cases only stock would be accepted, as the purchasers desired to continue to participate in the profits.

For the statements which follow, respecting the various rubber firms in the consolidation, the management of the latter are for the most part responsible:

The American Rubber Co.'s plant (Boston) has a capacity of 18,000 pairs of boots and shoes and 1500 mackintosh garments daily. Fifteen hundred hands are employed, and the weekly pay-roll is $14,000. The profits of the company for four years past have amounted to $1,210,000.

The Boston Rubber Co., organized in 1878, was founded by George H. Hood, who has since been its president and treasurer. In 1889 it added boots and shoes to its list of products. Its capital is $300,000, and its output in 1891 reached $950,000. Its plant is in Chelsea and Franklin, Mass.

Leverett Candee was first to make rubber shoes under the Goodyear patents. Henry and Lucius Hotchkiss became interested financially in his business, resulting in the formation of the firm of L. Candee & Co., since incorporated. The capital of the company is $300,000, and the president is Henry L. Hotchkiss, son of Henry Hotchkiss above mentioned. Charles L. Johnson, secretary and treasurer, is also a director in the United States Rubber Co.

Goodyear's Metallic Rubber Shoe Co. (Naugatuck, Conn.) was founded in 1843 by Samuel J. Lewis. More than 1300 operatives are employed and the daily capacity is 25,000 or more pairs of boots and shoes. George A. Lewis, a son of the former, is president.

The Meyer Rubber Co. (New Brunswick, N. J.) grew from the work of the late Christopher Meyer, who entered the rubber industry under the late Horace H. Day. He began the manufacture of rubber goods in 1844, the output including shoes. A fire the next year destroyed the factory and left Mr. Meyer without capital, when John R. Ford invested in the business, the firm-name becoming Ford & Co. In 1858 the name Meyer Rubber Co. was adopted. J. Howard Ford is president and James B. Ford treasurer. Five hundred hands produce more than 3,700,000 pairs of boots and shoes per year, valued at more than $1,000,000.

The National India-Rubber Co. (Bristol, R. I.) has $750,000 capital, more than $500,000 surplus, and buildings which cost $1,200,000. The product of goods is estimated at $3,000,000 a year, the number of employés is 1200 to 1500, and the weekly pay-roll $40,000 to $50,000. Besides a daily production of 1500 pairs of shoes, many other articles are produced, the insulated-wire department alone having a yearly capacity of $150,000 worth of goods. Col. Samuel P. Colt is president.

The New Jersey Rubber Shoe Co. (New Brunswick), organized in 1870, had L. L. Hyatt and later John R. Ford as president, and Christopher Meyer as treasurer. Since 1890 M. C. Martin has been president and James Deshler secretary and general manager, and both have become directors in the new corporation. The capacity is 15,000 pairs of boots and shoes daily.

The New Brunswick (N. J.) Rubber Co. was organized in 1849. More than 600 operatives are employed. The president is James P. Langdon.

It may be of interest, as indicating the growth of rub-

ber-manufactures in this country, to quote from the Massachusetts State Census of 1865 the statistics of the industry in that State, the only showing made having reference to the number of hands employed :

Towns.	Male.	Female.	Total.
Springfield	5	20	25
Easthampton	182	345	527
Lowell	19	72	91
Malden	80	70	150
Stoneham	100	50	150
Milton	8	3	11
Roxbury	100	...	100
Total	494	560	1054

As shown in the last INDIA RUBBER WORLD the number of employés in thirty rubber factories in Massachusetts in 1891 was 7857, with a dozen concerns not reporting.

The legal director of the United States Rubber Co. is Col. Samuel P. Colt, president of the National India-Rubber Co., who was born in Paterson, N. J., on January 16, 1852. His boyhood and youth were passed in the city of Hartford. He is a nephew and namesake of Samuel Colt, the inventor of Colt's revolvers. As he early developed marked business ability and a taste for industrial pursuits he was sent to the Massachusetts Institute of Technology, from which school he was graduated in 1873. After a year in Europe he entered the Columbia Law School, in New York, graduating with distinction in 1875. He began the practice of law in Providence, R. I., in 1876. From that year until 1879 he was a member of the General Assembly ; from 1879 to 1882 he was Assistant Attorney-General, and from 1882 to 1886 Attorney-General for the State of Rhode Island. In 1886 he formed the Industrial Trust Co., of Providence, and was elected president, which position he still holds. That organization now has a capital of $750,000 and does the second largest banking business in the State. In 1887 Mr. Colt became president and treasurer of the National India Rubber Co. At that time the company, with an enormous plant and unfortunate business methods, were in difficulties, and there were not a few who prophesied that the new president would gain experience but lose money through his new connection. During the five years, however, that Mr. Colt has had charge of the business, the company have paid regular dividends, increased their capital, and added to their surplus. The plant is situated at Bristol, R. I., where Colonel Colt has a summer home. All of the important lines of rubber goods are made, with the single exception of hard-rubber goods. The company were incorporated in 1864, and have a capital of $750,000.

PRESIDENT ROBERT D. EVANS.

ROBERT D. EVANS, now president of the United States Rubber Co., and the founder and late president and treasurer of the American Rubber Co., was born in Boston, on September 30, 1845. After his graduation from the Boston High School he entered the employment of H. A. Hall, who afterward built up the Hall Rubber Co. He left Mr. Hall after a short time to accept a position with C. M. Clapp, remaining there until the breaking out of the war of the rebellion. In the Thirteenth Massachusetts Volunteers, and with the Army of the Potomac, he passed through some of the severest engagements of the war, being wounded twice. At the close of the war Mr. Davis turned his attention again to his chosen field,—the rubber-manufacturing business.

Two positions were open to him on his return to Massachusetts, one with H. A. Hall, at what was then a large salary, and the other a partnership offer from C. M. Clapp. He chose the latter, the firm name becoming Clapp, Evans & Co. The new firm had a mill at Jamaica Plains, Mass., where they made clothing, carriage cloths, and wringer-rolls. Mr. Evans owned a part of the Moulton roll, with the exclusive right to manufacture it. Suits for infringement were brought against the concern by large New York and Boston manufacturers, and as Mr. Clapp thought the other side had a very strong case, and that there was an infringement, he wished to discontinue the manufacture, and the firm was dissolved. Mr. Evans then started a small plant in Jamaica Plains called the Eagle Rubber Co., and kept on making rolls, at the same time defending his title. The best legal talent obtainable was retained, and the suit resulted in favor of the Eagle company.

In 1873 the American Rubber Co. was started by Mr. Evans strictly as a jobbing concern. In addition to this the agency of the Myer Rubber Co. was taken by the new concern. A large business was done, the wringer-roll portion being especially profitable. In 1877 the large works at Cambridge, Mass., were started, the Eagle Rubber Co. and the American Rubber Co. being consolidated, and the erection of a plant at once begun. At this plant was manufactured clothing, carriage cloth, boots and shoes, and wringer-rolls. This manufacturing business was continued very successfully until December, 1881, when the works were completely destroyed by fire. In the following spring new factories were built on the same site, and the plant then erected, together with numerous buildings added from time to time as the growth of the business required, constitute the present large manufacturing properties of the American Rubber Co.

The fire, with the attendant disarrangements, was enough to appall any business-man. It occurred in December, and was followed by a severe winter, when but little outdoor work could be done. In addition to this, all of the larger rubber-shoe concerns at that time had greatly increased their plants and were looking for additional markets for their goods. The new mills of the old companies served for several years to glut the market with goods, a state of things that the American company felt seriously. To make the condition even worse, the Pará Rubber Shoe Co. had come into existence, and had their mill in operation three months before it was possible for Mr. Evans's new factory to turn a wheel. The superintendent of the American Rubber Co., and the foremen of

ROBERT D. EVANS.

all the departments, although they had been carried four months on the pay-roll while the plant was in ashes, deserted to the Pará company, and took with them nearly all of the skilled help. Left in a position where it was necessary to break in new help from the top down, the energetic founder and his lieutenants still worked on. The first year the goods turned out were rather "poor," as the president now confesses, but after that they rapidly surmounted their difficulties and in a short time were on a paying basis and declaring dividends. To-day the works have an annual productive capacity of $3,500,000 worth of rubber goods. Taken all in all, the American Rubber Co. have been, in the last ten years, nearly, if not quite, the most successful rubber concern in their line in the United States. At the start the capital was $200,000. Later it was increased to $500,000, and again increased to $1,000,000. To-day the capital and surplus are $2,500,000.

The phenomenal success of this concern is due to the energy and business ability of Mr. Evans. While having in a rare degree the faculty for securing the best assistance, and of surrounding himself with bright and successful young men, he has always been a hard worker, himself knowing every detail of the business. It was his custom for years to spend his forenoon at the factories, with his superintendent, and the afternoon at the city offices, looking after the finances. There was no part of the business, —whether buying supplies, marketing the goods or manufacturing the goods,—with which he was not as familiar as his most skilled lieutenant. His devotion to the success of the American Rubber Co. was so absorbing as to lead him to decline all offers of positions in banks or other corporations.

Mr. Evans is a member of the leading clubs in Boston, although far from being a club-man. He is passionately fond of yachting, and relies upon that and horseback riding or driving for recreation. The presidency of the United States Rubber Co. was an honor unsought by Mr. Evans. He had, however, long been on record as believing that the next movement in advance in the rubber-shoe industry would be a consolidation, and he had often recommended such a step. A remarkable thing about his election to the office was the unanimous expression of the whole rubber trade as to the fitness of the choice.

In reply to a question by an INDIA RUBBER WORLD representative as to the future of the rubber boot and shoe trade, President Evans recently said :

"I look for a continued and steady increase in sales, granting that we have any rubber weather, of course. It is a trifle early now to talk of the policy of the company in many of the various plants. I think, however, that I can touch on one point that may interest you. We ought to have a much larger foreign trade than we now have. At present we get it in a hap-hazard way. I think that if one mill were to devote its attention to styles that are adapted to the foreign markets, and would do nothing else, a fine business could be done in that line."

SHOE COMPANIES NOT NAMED IN THE PROSPECTUS.

THE Woonsocket Rubber Co., located at Woonsocket, R. I., is one of the leading rubber-shoe concerns in the country. The present corporation was formed in 1865 after a succession of copartnerships, and has successively increased its capital until now it has $2,000,000. It has a fine plant and its capacity is equal to an output of goods at present values of $6,000,000 per year. Joseph Banigan is president, Frederick Cook treasurer, and W. S. Ballou general selling-agent.

The Boston Rubber Shoe Co. began business in 1853, when E. S. Converse took the treasurership and management. Like nearly all the great rubber concerns, it was once a sufferer through fire. The capital is $3,000,000, Mr. Converse still being the active head of the business. The company own two immense manufacturing plants,—one at Malden, Mass., and the other at Melrose. About 3000 hands are employed, and the daily production is at present 45,000 pairs of boots and shoes. The floors of the workrooms in the two factories, have a surface of more than twelve acres.

The Manhattan Shoe Co. (Setauket, L. I.) are the successors of several companies, but their foundation was in

the L. B. Smith Co., afterward the Brookhaven Rubber Co. The latter went into liquidation and in 1890 the present company were formed, with a capital of $50,000. W. H. Elberson is president, and Edwin Elberson treasurer. The capacity of the factory is 8000 pairs of shoes per day. The company, though working with a small capital, has gradually worked itself into a prosperous condition, and in that respect has shown what good management can do under adverse conditions.

Several companies have incorporated into their titles the name of Goodyear. During the life of the patents of Goodyear the family granted licenses for their use to several companies, each to make a specialty. One made boots and shoes, another gloves, and so on, but all bore the name of Goodyear. When the patents expired, the field was thrown open to each company to make every class of goods, Then came a scramble for the title of "Goodyear Rubber Co." The company operating at Middletown, Conn., succeeded in being first to claim it, and it has since been retained. Their output is not large, as compared with some other concerns, but they have made a specialty of fine goods, winning a splendid reputation. As they handle the goods of the National India Rubber Co. and of several other concerns, however, their sales are very large. The president of the Goodyear Rubber Co. is Frederic M. Shepard, who appears in the directorate of the United States Rubber Co., but this connection is on account of his being a stockholder in the National, one of the companies in the new combination.

The Goodyear's India Rubber Glove Manufacturing Co., of which J. D. Vermeule is president, with factories at Naugatuck, Conn., make boots and shoes on a small scale as compared with their other output of goods, but their success has been due to making a specialty of fine goods.

The company at Lambertville, N. J., making rubber boots and shoes, devote more attention to other lines of manufacture. Even the rubber shoes they make are a specialty, protected from competition by patent.

Since the prospectus of the United States Rubber Co. mentions two factories, in addition to their published list, with which they have working contracts, there has been much speculation as to their identity. It is known beyond doubt that the Boston Rubber Shoe, Woonsocket, and Colchester companies are not included. The general opinion in the trade is that the Manhattan Shoe Co. will end in the combination, if it has not already been absorbed. The intimate connection of the Goodyear Rubber Co. with important factors in the United States Rubber Co. has led to the supposition that it would also be included, but any change in its management is likely to be a matter of price and its owners may hold out for higher figures than the other party is now willing to pay.

THE COLCHESTER COMPANY AND THE COMBINATION.

PENDING the appearance of the prospectus of the big rubber-shoe combination, many inquiries were current as to whether or not the Colchester Rubber Co. would be included. To quote the words of their president:

"We are not in the United States Rubber Co., but are working on an independent basis. I have no hesitation in saying that we regard the new company as of the greatest benefit to the trade in general. The marketing of rubber boots and shoes has been my business for thirty years, and in all that time I have never seen a season when the market was so steady in prices and there was so little complaint of price-cutting as this year. All of this is owing to the fact that a great majority of the companies had entered into contracts for the sale of their properties, which took out of the market the competition which has been so unpleasantly felt year after year ever since the dissolution of the old Goodyear association."

Mistakes in marketing goods are far more common than mistakes in manufacturing them. There are two ways of getting a market where competition is close; one is by selling goods for a little less than your competitor, the other by giving a little more for the money. The Pará Rubber Shoe Co. chose the former way, and are now no more. The Colchester Rubber Co. adopted the latter and their record has been one of constant progress. They have always received full prices for their goods and are constantly adding improvements to them. They are at present doing a mixed business about one-third of their business going to jobbers and two-thirds being done direct with retailers.

The idea of building up a business direct with the retail trade was to get out of the competition that so handicapped the older concerns, who did the work and gave the profits to the jobbers. By selling direct to the retail trade and saving a greater part of the jobber's profit, the Colchester company have been able to more than hold their own, when some of the other concerns in the grand fight that has been going on have scarcely made interest on their capital. Their daily output at present is 125 cases of Spading boots and nearly 300 cases of shoes, arctics, lumbermen's shoes, etc. Their gross sales for the year up to October 1, 1892, amounted to $2,600,000. While they rank in machinery and engine capacity about No. 8 among fifteen companies, their output of boots is fourth, only three companies exceeding them, namely, the Boston Rubber Shoe Co., the Woonsocket Rubber Co., and the L. Candee Rubber Co. They are at present employing about 800 hands and have hard work to keep in sight of their orders.

IN 1860 a number of soldiers were buried at Castle Island, just outside of Boston. That island is now being turned into a pleasure park, and the bodies were recently removed. A pair of suspenders was taken from one of the coffins, and an expert, as a matter of curiosity, examined the rubber thread in them and found it elastic and strong as ever. This speaks well for the lasting qualities of rubber thread.

RUBBER BOOT AND SHOE PRODUCT OF THE UNITED STATES.

Comparison by Decades Since 1860.

[Estimated for THE INDIA RUBBER WORLD by a Leading Rubber Manufacturer.]

COMPANIES.	1860.	1870.	1880.	1890.
	Net Product.	Net Product.	Net Product.	Net Product.
Hayward	$200,000	$1,500,000	$1,000,000	Colchester..$1,250,000
Goodyear (Wales)	100,000	1,000,000	1,500,000	1,500,000
Ford	100,000	Meyer.....750,000	1,000,000	750,000
Newark	100,000	500 000	.....	.....
New Brunswick	100,000	750,000	1,000,000	750,000
Candee	75,000	700,000	2,500,000	2,500,000
Providence	75,000	National.....750,000	750,000	500,000
Boston Rubber Shoe Co	75,000	1,000,000	3,000,000	5,000,000
Hyatt	.....	400,000	New Jersey..1,000,000	1,000,000
Woonsocket	.....	450,000	2,200,000	3,500,000
Odorless	.....	100,000	.....	Middletown...250,000
Haywardville	.....	100,000	.....	.....
Glove Co.	.....	.....	750,000	1,000,000
American	.....	.....	400,000	1,500,000
Brown Co.	.....	.....	100,000	.....
L. B. Smith	.....	.....	400,000	Brookhaven...750,000
Union	.....	.....	250,000	.....
Lycoming	.....	.....	.....	500,000
Pará	.....	.....	.....	1,500,000
Lambertville	.....	.....	.....	200,000
Franklin (Boston Rubber Co)	.....	.....	.....	250,000
Total Net Product	$795,000	$8,000,000	$16,000,000	$22,750,000

Net Selling Prices.

CLASSES.	1860.	1870.	1880.	1890.
Men's Boots	$4.01	$3.80	$2.66	$2.00
Men's Arctics	1.36½	1.43	1.26	.94
Men's Shoes	.78	.....	.....	.37
Women's Shoes	.50	.....	.35	.26
Pará Rubber, average	.60½	.80	.85	.80

Memoranda.

Sales in 1862 ..... $1,000,000
Sales in 1863 1,500,000
September 14, 1864, high-water mark, *war* prices:
Men's boots $6.24
Men's arctics 3 12
Men's overshoes 1.56
Women's overshoes 1.17

Views of One Mechanical-Goods Man.

A PROMINENT manufacturer of mechanical goods, who does not wish his name to appear in connection with an interview, thus talks concerning the proposed combination of the mechanical-goods factories:

"I do not believe that in my day or yours such a combination can be effected. It is far more possible in the boot and shoe line. There you have a business comparatively simple, with but few compounds, and processes and machinery that are almost identical in the various mills. In the manufacture of hose, belting, packing and the hundreds of other articles that the mechanical goods men make, each mill has its own processes, its own special knowledge, and its hard-won experience. There is no common ground to meet upon in arranging a plan of this sort. The fact that new appliances to be made of rubber are daily brought to this trade, and that usually some mill will show a special aptitude for each particular case, bears me out in this statement. This condition of things has bred up a class of men many of whom are leaders, and are so full of individuality that they would refuse to work under any one else, even were it possible. Then, too, where is the need of combination? The past year has been a prosperous one for almost everybody in the trade. All of the large mills have been forced to grow larger. Some lines of goods have been cut in price until there is but little money in them, but others have shown a handsome profit, so that nearly all have made money. The mechanical-goods line here is full of specialties, and patented goods, and where that is the fact there is not the need for the protection of a combination that the manufacture of staple goods needs."

Rubber Imports and Exports for September.

THE imports of India-rubber and Gutta-percha for September, compared with the same month one year ago, are thus stated by the Government reports:

	1892.	1891.
India-rubber, pounds	1,897,767	3,331,206
value	$1,337.330	$1,526,995
Gutta-percha, pounds	49,398	25,322
value	$7,711	$9,073

From the beginning of the year, including September, the imports of both commodities aggregated 27,407,233 pounds, against 25,481,516 pounds for the same period of 1891.

The value of rubber shoes exported is stated at $24,399 against $14,644 in September, 1891. The value of other manufactures of rubber is stated at $85,439, against $80,434 in 1891.

THE VALUE OF SOLID EMERY WHEELS.

*By T. Duncan Paret.**

DURING the last twenty-five years the use and manufacture of solid emery wheels has so increased that an important industry has been created. In many large and progressive establishments there is a strong faith in the great future extension of this industry, and nearly all users admit that they do not use near as many solid emery wheels as they ought to use.

The reasons why more are not used are simple. It is not the first cost of the goods which hinders their freer use. This cost, in fact, is now less than half what it was twenty-five years ago. The main reason for the slow increase of emery-grinding plant is lack of time and space. As emery grinders run at a very much higher speed than do the lathes, planers, drills, and general machines of an ordinary shop, such grinders cannot be run by a belt directly from the line shaft, and hence their erection necessitates intermediate and counter shafts. Furthermore, such grinders need to be set near lathes, planers, and other high-priced machines, and such setting necessitates the use of suction-fans, or dust-exhausters, whose high speed also calls for counter shafts. Thus the emery grinder, whose first cost is small in proportion to that of lathe and planer, has its importance rated in proportion to its cost.

The reasons which prevent those wheels actually in use from being worked to the best advantage are simple. Owing to the high speed and the trouble of countershafting, a correct standard speed is seldom arranged for. Owing to high speed there is more than usual likelihood of slip of belt. A still more important reason is the excessive vibration of the emery wheel. It is almost impossible to manufacture solid emery wheels which are in perfect balance, and an unbalanced wheel jumps. This jumping sometimes lessens and sometimes ceases entirely, if the grinding machine is heavy and bench or floor solid. Even wheels originally perfect soon get out of balance, owing to unequal wear, if the metal being ground is applied by hand instead of automatically. The amount of vibration due to the revolution of an unbalanced body at the speed of a mile a minute can hardly be calculated. The number of revolutions per minute is so great that the hand cannot preserve continuous contact between work and wheel. The metal being ground is struck and thrown off by the wheel, a large portion of whose surface revolves untouched by the metal before contact is again secured.

American-built emery grinders are too light in weight as a universal rule. The users of solid emery wheels do not realize the loss in money value due to the imperfect mounting of such wheels, and therefore are unwilling to pay the price needed to secure substantial machines. In this matter a radical change must be made if users are to secure the greatest possible profit.

In many cases the choice of a solid emery wheel depends entirely on color. In some sections of the United States at the present time a prejudice exists against all dark-colored wheels. In some cases porousness or openness of texture is considered the characteristic of a first-class solid emery wheel, and the value of some wheels has been boasted of because it was claimed that water would flow through them, and that "you could blow through them." Value is set upon some solid emery wheels because they are said to be composed entirely of mineral ingredients, and to contain no glues nor gums. Some are used on account of faith in the special brand of emery they are said to contain, while the virtue of others is based on the peculiarity of what is called the bond. It has been found out that a wheel does not necessarily grind faster because "you can blow through it," and that some close and compact wheels do better work than those of open texture. Mineral ingredients have not proved their superiority to organic matter, nor has color been identified as a distinct factor of quality.

Yet to-day the majority of factories are using solid emery wheels whose purchase has been influenced by the friendship of buyer and salesman—by the unfounded bias of some foreman, or by the unreasoning and baseless prejudice of some unintelligent grinder. In the rarest of cases can either buyer, foreman or grinder give any specific statement as to the product of any wheel or the cost of such product. Singular as it may appear, even the system of paying for grinding by the piece does not lead to a careful estimate of real value, and many buyers are found who seek the most durable wheels because their men are paid by the piece, while the men accept such wheels, not discovering that excessive durability almost always necessitates an excessively small product.

While the great majority of users neglect to make any inquiry as to the real money value of emery wheels, the few who do inquire are most unlikely to establish strict test conditions, and secure accurate comparative results.

A prolonged investigation has been made as to the comparative quality of fifteen different makes of American solid emery wheels. This demonstrates that under equal conditions the fastest grinder of the fifteen makes will grind off more than twelve times as much cast-iron per minute as the slowest grinder does. It does not necessarily follow that the slowest grinder is the dearest wheel of the fifteen, and the fastest grinder the cheapest; for first cost of wheel, power consumption, wear of wheels, etc., have also to be considered. But the fact does cast much doubt on the general assumption that one emery wheel is as good as another. Is it likely that a wheel which will cut only .42 of an ounce of cast-iron per minute is as valuable a tool as that which will cut 5.13 ounces per minute? It is a singular fact that the two makes which

* From a paper presented at a meeting of the American Association for the Advancement of Science.

stand thus at these opposite extremes are among the older manufactures of this industry, and almost equal in age.

Nothing has cost emery-wheel users so much loss as their false estimate of the money value of durability. It may be possible to get an emery wheel so friable that its rapidity of wear is not equaled by its increase of product; but this investigation seems to show that the majority of American wheels are too durable and too unproductive.

While the consumption of wheel material does not bear a regular proportion to the amount of metal ground, yet, as a general rule, increased wheel consumption implies increased product. So marked is the rule that it may be safely assumed that any wheel which is notable for its durability will be a markedly slow grinder.

In many cases the workman is not satisfied with the small product, and to secure a greater, applies more pressure. This pressure soon exhausts him, and he then gets rest and change of work by stopping the machine and proceeding to chip or hack the face of his wheel. Some of the so-called very durable wheels largely increase their product if a great pressure is applied. One well-known and popular make, whose average metal removal per minute at a fair, ordinary pressure, was only .72 of an ounce, when the pressure was increased about 2½ times attained an average of 7.09 ounces. The maximum metal removal of this wheel in any one minute was 11.66 ounces, yet in some cases its minute metal removal was absolutely nothing. The pressure which secured the average of 7.09 ounces per minute was an excessive pressure—a pressure at which some makes would be dangerous in the extreme, and which no workman could maintain. If wheels were provided which gave a fair product under light pressure, metal grinding by the use of solid emery wheels would not only be easier for the workman, but much more profitable.

THE MANUFACTURE OF RUBBER VARNISH.

By Ralph W. Gray.

THE varnish business, like the manufacture of rubber goods, is what is known as a secret business. There are in the United States about a hundred factories devoted to the manufacture of varnishes for furniture, carriage, and house work, with a few that devote their energies to manufacturing fine goods for artists. The use of varnish primarily is to give luster and durability to whatever it covers. In India-rubber work the varnish is put on not alone to add durability, but to prevent the efflorescence of the sulphur. The bases of most varnishes are linseed-oil and spirits of turpentine, but to those that are to be used on hard surfaces where a special luster is required, certain gums are added to give brilliancy and hardness. These gums are all of the resin families, the best being the hard fossil gums known as Kauri and Zanzibar gums. Certain varnishes are made from amber and a fine varnish is also made from celluloid. The more elastic a varnish is to be, the smaller the percentage of gum that is put into it. It follows, therefore, that in making rubber varnishes little or no gum is used.

As the bulk of rubber varnish is made of linseed-oil, the secret of the business would naturally lie in its preparation. Many of the rubber-factories have in connection with their plant a small brick building where is set a large chaldron in which the oil is boiled. The operation is more or less attended with danger from fire, and it is therefore conducted at some distance from the main building. Considerable skill is acquired by the men who have charge of manufacturing the varnish, and as a rule those who are expert in this line, do nothing else, and they receive good wages. This is just, as they incur considerable peril, many accidents having occurred in which the laborers have been badly injured.

The oil, after having been boiled to the proper consistency, either with or without the addition of a certain percentage of sulphur, Prussian blue, or resin, is taken in the light clear pasty mass to the varnishing rooms, where it is thinned with spirits of turpentine and applied to the goods by means of brushes. There are no special tests for the quality of varnish, the ordinary way of examining it being to spread a thin film upon a piece of glass and to look through it toward the light, with a view of examining its clearness. Often the piece of glass is put in the sunlight, where the film will dry, and allowed to stand for a year. A first-class varnish during this period should not shrink largely, nor should it crack. Linseed-oil, however, is capable of absorbing a great quantity of oxygen, and unless carefully and skilfully boiled will continue the process and crack.

Chemically, very little is known concerning the drying of linseed-oil, but it is likely that the subject will be investigated thoroughly before long, with the means that are now within reach of the modern chemist. As linseed-oil itself is a powerful oxidizer, those who purchase it for use in varnish are very particular in getting exactly the kind they need, and will not take chances on any brands, even if the price be considerably to their advantage. A piece of canvas spread with a linseed-oil varnish that has not finished its oxidization will in the course of time be thoroughly destroyed, and the same effect will be produced upon a thin rubber surface. Hence it is quite important that this fluid be carefully tested before use. Some manufacturers make a varnish for rubber boots and shoes of the oil alone boiled to the proper consistency, while others add various dryers and certain gums. It is a question if t would not be wise for these same manufacturers to examine carefully the various gums used in the regular varnishes to see if a certain percentage of them added to the linseed-oil would not give an added brilliancy and a better durability. Of course this amount would naturally be very small, as Kauri, for instance, if added in too great proportions would have a tendency to crack when the goods are stretched.

In an experiment recently tried in a large rubber-factory,

10 per cent. of Kauri gum was added to the varnish and found to be altogether too much; 3 per cent., however, gave a very pleasing result and seemed to have a luster that was not shown in the regular oil varnish. Varnish for rubber-work as a rule is applied before the goods are heated; therefore it has the chance of additional drying during that operation. Many of the goods when they come out of the heater are quite sticky, but a very little airing remedies this. To day on almost all rubber goods that are put on the market there is found to be a very fair quality of oil varnish. A good grade of rubber when covered with varnish gives a far better result than a poorer grade, as the solvent often strikes through the shoddy or poor-grade rubber and appears on the cloth itself, giving a stained effect and furthermore materially weakening the body of the rubber. In experimenting with varnishes a variety of solvents have been tried for the purpose of cutting the boiled oil. Of these any of the hydrocarbons will answer, because they are indifferent to atmospheric action and possess great solvent power. Oil of turpentine, however, is the best, and benzine the cheapest, of the various solvents in use.

IS THE RUBBER INDUSTRY UNHEALTHFUL?

By Thomas M. Green.

FROM time to time there are complaints from the workmen in various rubber-mills that the work is exceedingly unhealthy. In the shoe-factories the workmen have complained of lead-poisoning from litharge. The same trouble has been experienced in mechanical-goods factories and in some cases in factories where an acid cure is used there have been constant complaints from the laborers. In one mill in particular they went so far as to claim that the fumes from the acid caused temporary insanity in several cases; this, however, was not proved.

One of the New York newspapers had a very sensational article which many will remember. It read as follows:

"Mental derangement has become so common among the workmen employed in ———'s rubber manufactory that complaint that there was something wrong there was made to the local Board of Health. The Health Officer was ordered to investigate the matter. He found that within about six months three severe cases of acute mania have developed in what seemed to be perfectly sound persons.

"Large quantities of bisulphid of carbon are used in vulcanizing the rubber, the poisonous fumes of which are alleged to be the cause of the insanity. The workmen often complained of sick headache and nausea, and three became raving maniacs and had to be sent to an asylum. The cases of workmen named K——— and S——— developed some time ago; B——— was taken suddenly last Saturday morning. He acted peculiarly and was discharged in the afternoon. At night he used abusive language to his wife and indulged in all kinds of senseless talk He would lie down on the floor and kick violently. He would listen to no advice, but said he was the Almighty and supreme. He once claimed to be President of the United States. He was haunted by the idea that somebody was going to kill him. Becoming dangerous, he was locked up and pronounced insane. One of the previous victims had proclaimed himself the Almighty, and behaved in much the same way that B——— did.

"Drs. W——— and F———, who gave the certificates for insanity without making any positive assertions as to the cause, said that it was very plausible to attribute it to the fumes of the chemicals used in the factory, which are very deadly in character. Such things have produced insanity.

"The carbon and sulphur are mixed in a small room over a retort, to which is connected a flue for carrying off the vapors. In another room the rubber is brushed with the mixture contained in six small bowls, each bowl having a separate flue leading to the chimney, in which is a patent steam exhauster to carry off the fumes. There is a man to each bowl.

"The superintendent, while admitting that the fumes were poisonous, said that their system was the one commonly used, and that the cases of insanity could not properly be attributed to it."

In no other factories using the same materials, however, have such disturbances been reported, and the case was far from being proved.

Another cause for complaint is the naphtha fume in gossamer and other factories, where the rubber is used in solution. Take it all in all, however, the laborers have little reason for grumbling, as they are generally well paid and a fairly healthy set of men. Could they look into some other lines of manufacture where the workmen are constantly exposed to disease and death, they would be better satisfied, perhaps, with their lot. Men working where they are brought into contact with cumulative poisons are great sufferers. Those also who are employed in making bleaching powder and salt cake are dying daily. In the ovens where the salt cake is placed there is constantly given off a strong acid gas, and were it not for the flannel protectors over the mouth it would be almost instantly fatal. As it is the teeth and gums feel the effect of the acid and are soon eaten away and the nose and the face are frequently badly scarred. The bleaching-powder is made largely of lime and before it is treated to chlorine it is reduced to a very fine powder. In the bleaching, heating and slaking the men have a terrible time. They are obliged to work constantly where the air is so full of lime that one can hardly see and every bit of it that comes in contact with a particle of moisture has a bite as sharp as the sting of a bee.

These men also have flannel muzzles and the exposed parts of the skin are carefully greased. In some places they also wear masks to protect them. Still the lime filters in somewhere and inflicts the bite. It is especially hard on the lungs; the air is therefore inhaled through the muzzle and again out through the nose. These lime-workers being so covered with unslaked lime, dread a wash as much the most incorrigible tramp, and for months at a time the only bath they take is their daily bath of grease. Of all the laborers in the lime-works, the packer has the hardest of it. When the others have finished their work the lime is left spread to a depth of three or four inches

over the chlorine chamber. It is raked so the gas can get into as large a surface as possible. The doors are then shut and stopped with clay and the gas turned on. After a long period, when the lime has absorbed the proper quantity of gas and turned to bleaching powder, it is ready for the packer. The powder-packer then enters the chamber, and although most of the gas has been exhausted, the atmosphere is still charged with it and the heat is very great, but in spite of all this he bears the fumes of gas and enervating heat and spends his eight hours a day there earning a fair living. This is but one of many such occupations and in contrast the rubber grinding room is a paradise.

THE INFLUENCE OF ADDITIONS TO RUBBER.

FROM the results of their researches as recorded in a late Berlin publication, "Investigation of the Beneficial and Detrimental Influences of the Usual Additions [Adulterants] to India-Rubber and Gutta-Percha," Messrs. Heinzerling and Pahl make the following deductions:

I. All mineral and organic admixtures decrease the elasticity of soft rubber goods; 10 per cent. of sulphur gives the best result as a vulcanizer. With hard-rubber goods, on the contrary, the elasticity is not only not decreased, but is in some instances even increased by the addition of some organic matter, as resin-oil, resin, and asphalt, or of inorganic substances, as cinnabar and lime.

II. The resiliency of soft rubber is more or less heightened by an admixture of tar, chalk, barytes or zinc oxid, and quite remarkably so by the addition of magnesia. In hard rubber the presence of cinnabar and of magnesia increases the resiliency, as well as does a more protracted vulcanization with larger quantities of sulphur. The resiliency is, however, diminished by all other inorganic additions, such as lead oxid, lime, and also by all organic substances—except pitch—in both soft and hard rubber.

III. The addition of mineral substances, such as zinc oxid, lead oxid, chalk, magnesia, lime, and also of organic substances, such as tar and glycerin, increase the hardness, both of hard and soft rubber. This quality is also accentuated in hard rubber by the addition of larger quantities of asphalt and of resin or resin-oil, with lime or magnesia—where these substances are added in the proper proportions—and also by the addition of cinnabar. On the other hand, the addition of oil gum (prepared by treating hot oil with sulphur) the so called "fastice" (?) or oil substitute, (made by the action of sulphur chloride on oils) rosin oil and paraffine markedly lessen the hardness of soft rubber.

IV. Pure gum with sulphur, which is by many thought to be the best insulator, can by no means be so considered as a whole list of mixtures of gum with metallic oxids, such as zinc oxid, with lime, chalk, magnesia (only in small quantities) and antimony sulphid, as well as all organic substances, such as "oil gum," "oil substitute" (the latter in small quantities only) resin-oil, resin, and paraffine give much better results in insulation than does a mixture of pure gum and sulphur alone. The insulating capacity of rubber to which paraffine has been added is, for instance, quite remarkable. Lead oxid, cinnabar and magnesia (in larger quantities) decrease the insulating power of the rubber. The poorest conceivable insulator is the "cold-process" vulcanized gum—the so-called "patent rubber."

V. In all those kinds of rubber which contain organic adulterants vapor is as a rule given off at the higher temperature (130° to 150° C.) and these specimens cannot therefore be said to be permanent at high temperatures.

VI. All those specimens containing chalk, lead oxid and barytes, are strongly attacked by acids, both sulphuric and acetic, and the rate is as a rule increased from the formation of insoluble salts, as calcium sulphate, for instance, and also probably by the formation of basic salts such as basic acetates. The resistance to the action of oils is heightened by the addition of the inorganic substances mentioned, the oxids of zinc and lead exercising a particularly marked influence. The influence of alkalis and also that of illuminating gas proved too unimportant to allow of any noteworthy deductions being made therefrom. The organic additions, mentioned above, all strengthen the resistance of rubber to acids.

VII. Most varieties of rubber containing added mineral matter become hard and brittle after lying some years; in consequence of this hardening the mechanical value is diminished. The insulating property seems to be but little affected by this change.

Rubber-Wear for Horse and Driver.

IN protecting the horse from the rain much progress has been made by the rubber-manufacturer. In fact his mackintosh is all right, but in the matter of feet, the blacksmith still holds the exclusive field. A good horse-cover with a hood costs $5, this being for luster sheeting, but when the rubber is made on drill an extra 50 cents is demanded. Enameled sheeting costs about the same, but the drill is worth $6. The millionaire's horse who picks his way down Fifth avenue in the elegant white sheeting cover carries $13 worth of mackintosh on his back and neck, and if his owner is particular, he gets a good drill one for $15. The horse being provided for in swelldom, then comes the coachman. A hat-cover of sheeting, and by the way better suited for a "night-hawk," costs $1.25, but fixed up with a cockade it is worth $2. This is not ultra enough for those inside and on the edge of the "Four Hundred," and so it is colored to match the livery, at a cost of $3. Of course there is a wide variety in coats, but a good white coat can be had for $10, or a cape with sleeves for about the same money. A wagon-apron costs from $2 to $3, the latter figure buying serge in a dash pocket. There is plenty of rubber about a coach or wagon, but these items represent about all that is required for protection of horse and driver.

Box Shooks in the Rubber-Shoe Trade.

BEFORE the first of October in each year the large rubber-shoe houses place their orders for the year to come for shooks. It may be that the general reader does not reckon this queer word among his linguistic possessions. A shook, as far as boxes are concerned, consists of two ends, a top, bottom and two sides. These are shipped in bulk, and the boxes put together and nailed at the factories where the goods are packed. For smaller boxes, such as rubber shoes are packed in, second-growth pine is used, and of a medium quality as regards clearness. The boards are sawed a certain length that there may be no waste, and of two thicknesses, the heavier being used for the ends, the lighter going into the body. The lumber is usually cut in the winter, although that felled in the early fall is of a better quality. Special machines for cutting and matching are used and the supply for a very large mill can be turned out in a few weeks time. An idea of the amount of lumber consumed may be gathered when it is known that one rubber-mill, not the largest by any means, places an order annually for 300,000 boxes in the shook. It is said further that one of the largest rubber-mills consumes 15,000,000 feet of lumber in one's year's boxing of goods. Factories that make a specialty of shooks are located in New York and Boston, with mills in New Hampshire, Vermont, Maine, Michigan and Canada. In addition to the rubber-shoe industry, the largest consumers of shooks are manufacturers of leather shoes, soap, spices, fish, and chemicals.

The Rubber-Goods Trade in the South.

THE rubber business in the South was sized up by the chief officer of a large company the other day in this language :

"We sell more goods in the city of Chicago than we do in the entire South."

The rubber trade in the South is peculiar. Comparatively few boots and shoes are sold. Some sporting boots are sent there, but not far South of Mason and Dixon's line. There has been a good trade in tennis-shoes, the negroes taking a peculiar fancy to that sort of shoe. The "gum," as the rubber shoe is called in the South, is bought only when absolutely necessary. This is accounted for by the fact that Southern ladies pride themselves on their dainty feet, and do not care to add to their apparent size in buying footgear. Latterly a good trade has sprung up for rubber shoes in Texas, however, and the trade there seems to be growing from season to season.

In rubber clothing the Southern trade does not amount to much. The winters are not cold and the mackintosh is not so comfortable as in the North. Very few overcoats are seen in the Gulf States, so it can be seen that a warm garment is unnecessary. Some surfaced goods are sold, but coupled with the extent of the country, the amount is inconsiderable. In druggists' sundries, the stores in the larger cities carry good lines, and excellent qualities are seen. In Texas there is also a noticeable growing demand for these goods. For mechanical goods, manufacturing centers are very fair customers, and perhaps this class is the leader in the rubber line in the South. In specialties, the South is very backward, the people educating themselves slowly, looking upon what the North has learned to view in the light of conveniences as luxuries.

One reason for all this is that the South receives few visits from traveling-men. Within the past year or two, that section has been poor, and in that time the number of specialties thrown upon the market in the North has grown considerably. The Southern people do not know of them, except as a neighbor may introduce a particular article into a community.

Tradesmen there, as well as in other places in these times, are very careful about stocking up with new and fancy articles. The South probably will afford a good market for rubber articles some day, but the present lack of energy in their introduction will have to give way first to more enterprise on the part of the manufacturers; although perhaps the profit to be derived in the early stages of such a movement may be a matter of too serious calculation to warrant the effort.

Rubber-Tree Planting in Florida.

A WRITER in the New Orleans *Times-Democrat* revives the idea of planting rubber trees in Florida, and states that it is moist and hot enough there to raise rubber of an excellent quality. It seems that one generation speedily forgets the experience of a preceding one. About forty years ago the United States Government planted rubber trees in Florida, and they may be there yet. Some were cared for also at the Centennial Exposition, and some are found in botanical gardens elsewhere. The trouble is they don't produce rubber. Florida is outside of the Tropics; Pará is on the Equator. It rains every day at Pará or else there is fear of a drought; Florida gets its quota of rain a good deal in the winter and not so much in the summer. Rain, continual hot weather, monkeys and rubber go together; and rubber is the first to drop out of the combination. The New Orleans writer states that da Silva planted 20,000 rubber trees near Pará, on Bom Intento, in 1865, at a cost of $3200. Of these only 1000 remain; the Amazon, which revels in nature and cares little for art, washed 19,000 away in one of its annual "tears." These trees yield a small profit now; but the practical mind asks what is the use of spending $3200, which in 25 years amounts with compound interest to $50,000, to obtain something that is so free that what would be called good-sized countries in Europe are lying idle in a virgin forest that will not be reached before the shoddy-man has found a way to pay a little something to the importer to go out of the business altogether.

THE recent annual report of Labor Commissioner Charles F. Peck, of New York, which has attracted so much attention in political circles, states that in 1891, as compared with the preceding year, there was an increase in the production of rubber goods in the State amounting to $159,490, and an increase in wages of $18,442.

The Use of Rubber in Carriage-Building.

IN an article on street pavements and tires, in the *Carriage World*, J. Charles King says:

"Asphalt should not be used for city streets—wood only, if properly laid and cleaned. Stone-pitching is the best and cheapest, and does not need the block of road traffic for repairs one-tenth so much as wood or asphalt, and is cleaner and sweeter in all weathers. Next to macadam surfaces it is most nonslipping for horses. The din of wheeled traffic can be lessened by the use of rubber-tired wheels, or, better still, for carriage-users, rubber-felloed wheels with light metal tires outside, a sketch and description of which is appended.

"Although vulcanized rubber has been in use in carriages in England and France many years, many manufacturers of parts of ironwork to standard patterns and sizes do not understand the main principles of its application to springs and scroll-irons. One of the chief uses when applied to the pipe-eyes of springs and scroll-irons, is to cut off contact of iron and iron so as to prevent jar and noise. At the late French International Exhibition some of the best forged ironwork and springs had India-rubber applied in a way which insured contact of rubbing surfaces of spring-eyes with scroll-irons, which allowed the jar to be communicated from the roadway to the carriage, to the annoyance of riders, who expected silence by the rubber bearings to springs to their carriages. The fault was pointed out and admitted by the expositors. Cheap warehouse ironwork is equally defective in England. Workers paid by the gross for inserting "rubbers" know nor care little whether right or wrong so long as they can take more money on Saturday.

FIGURE 1.

[Form assumed by India-rubber tire in contact with road.]

"The more rubber is applied to jointed surfaces or road bearings of a carriage the lighter and easier it moves and springs, and more noiseless for a rider if the road be a rough one.

"The rubber tires on vehicles are a gain in silence, but on a smooth road cause the vehicle to move harder for the horse. The weight of the vehicle flattens the rubber tire on the road, and presents a bulge of tire in front of the advancing wheel as at *A*, Fig. 1, which has to be crushed down to allow the wheel to roll forward. Now, on a rough road this bulge would bed its cushioned surface into the projections of the road, thereby avoiding lifting the vehicle up over them, so that for such roads the gain is great; but as the streets and roads in our chief towns and cities are generally so smooth and level there is a loss by the use of these tires, and their cost and rapid wear by road friction form a serious expense to the repairs of a carriage.

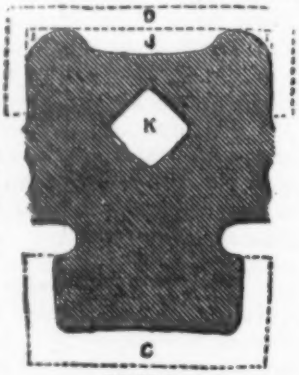


FIGURE 2.

[Section of India-rubber felloe rim—C, flanged rim holding ends of spokes; D, flanged tire on felloe rim; I, J, I, spaces between rubber and tire; K, center hole running through tire.]

"Some of these tires [Fig. 2.] have been in use five years, regular wear, and have not needed repairs. Their first cost is one fourth less than rubber-tire wheels, and the vehicles they are applied to can be made much lighter than ordinarily."

Rules for the Use of Petroleum as Fuel.

IN the course of an interesting lecture upon the subject of petroleum as fuel, delivered recently by H. K. Lindsay of Cincinnati, general agent of the central department of the Lancashire Insurance Co., before the Insurance Library Association of Boston, he suggests the following rules for the use of the oil for this purpose, so as to secure the greatest measure of safety from the chances of fire:

For crude petroleum: First, storage tanks, except for daily use, must be located at least 100 feet from building, provided with embankment or wall, to prevent, in case of leakage, the flow of oil toward buildings. Underground tankage being preferable for safety and economy, may be within fifty feet. Second, for daily consumption, permit to be given to have iron tank with close iron top, having a safety pipe of not less than 1½ inches diameter, and ten feet high, to allow escape into open air of all accumulation of gas, the capacity in no case to exceed five barrels for each boiler, and may be located immediately outside of boiler-house. If twenty five feet outside, tank may be open. Third, a stop-cock in all cases to be placed in supply-pipe where pipe leaves the tank, that in case of accident to the pipe the supply can be shut off at the tank. At the boiler the supply-pipe should be supplied with a stop-cock, with an opening not larger in any case than three-sixteenths of one inch in diameter, so that under no circumstances could the flow of oil under the boiler be greater than could be consumed, thus preventing an overflow from flooding the fire-box or arch with oil. Fourth, a perfect combustion requires that the oil be heated and injected under the boiler with steam; therefore, all fires should be started with wood or coal, or by the use of small auxiliary boiler, and oil should not be introduced until five pounds of steam are secured.

For reduced oil: The tank should be fifty feet from plant if above ground, and twenty five feet if under ground, with the same arrangements as to the pipes and stop cocks as are used with the crude oil.

A NEW substitute for India-rubber and Gutta-percha has been brought out in Europe. It is a compound of manila gum, with 5 per cent. of Auvergne bitumen mixed with benzine and 5 per cent. of the oil of resin. An addition of 5 per cent. of India-rubber is added to it for many purposes, and the substance can be vulcanized in the usual way. The composition of the whole suggests the average compound, although the inventor believes that he has something equal to the finest of Pará.

INDIA-RUBBER SCRAP.

THE capabilities of design in the rubber mat are hardly realized at first sight. A design before the courts in an infringment case is in point and the lines on the corrugated pattern form the subject. The design consists of parallel depressions or ridges, the general line of the direction in one section making angles to meet those in contiguous sections. The effects under the light are different, according to the position the person takes in viewing them, and as he changes that position the shades are similar in changes to those of the kaleidoscope. One minute one portion appears gray, another blue, and others almost black, and still others will have a metallic or silvery tinge, and again a rich velvety color. A change in position, and everything is reversed. Another position and mosaic patterns appear. The transformations are wonderful, and only go to show the faculty in some designers to work out artistic effects in manufactures of rubber, a material having presumably little in it for exercise of such efforts.

* * *

THE manufacture of oil-hose is a specialty requiring much skill. It is well known that oil in contact with rubber produces a deterioration of the latter and the skill comes in compounding the inner tube. Different sorts of oil have different effects, a detail that ought to be considered when ordering. Steam-hose often is exposed to great external heat or it may come in contact with hot cinders. It is protected often by marline to obviate the danger of destruction from such causes. Brewers require a very strong hose made of tough gum, firmly and closely woven extra heavy duck, a tube that will resist hot liquids or steam, with well-capped ends, all of which must stand an enormous pressure and the hose not kink. Even all and each of these have sometimes for special uses to be in the superlative degree.

* * *

THE ordinary cements are composed of India-rubber or Gutta-percha dissolved in naphtha and bisulphid of carbon. This makes a cement fairly practical for the majority of uses, but latterly a demand has been created for a better sort which has been met by new compounds, the ingredients of which are kept with the usual secrecy of rubber-men. This superior solution is excellent for the soles of shoes, but finds its great demand in bicycle-tires. The bicycle-tire can truly be said to have set a high standard for manufacturers in everything that pertains to its make-up. In it there is no scheming to work in an inferior substance. Rubber cement usually sells for about $1.50 per gallon; the new sort is worth $4.

* * *

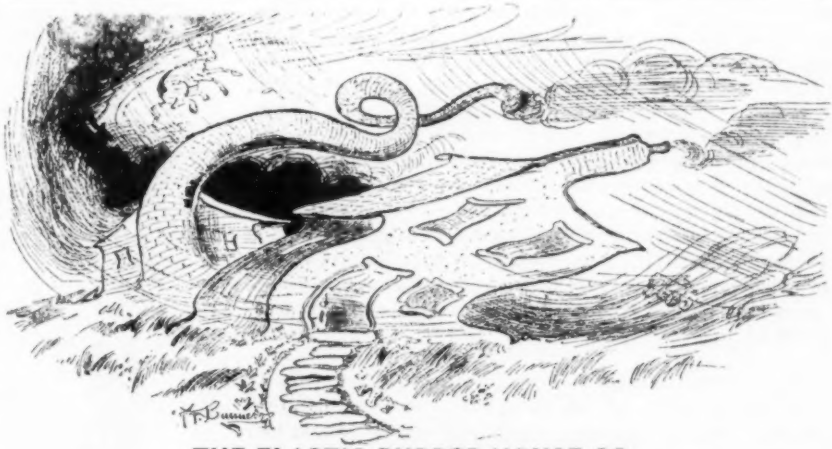
THE drying-room of the National India Rubber Co., at Bristol R. I., is on the second floor of one of the buildings. One of its peculiarities is the absence of stairways. When the elevator is not running access can be had to it only by means of ladders. The object of this is to afford the least possible facilities to persons disposed to break in at night and steal rubber, which is quite heavy for its bulk and is worth a dollar a pound after washing. The value of the material hung at one time in the drying-room is not less than $100,000.

* * *

THE advantage of rubber belting is its combination of cheapness and durability. A belt made in Bristol was used by Draper Bros., Canton, Mass., twenty-one years without any more attention than is usually given to leather belting. The cost of a large belt forty or fifty inches wide is one-fourth that of leather, as in making the widest belts there is great waste in leather, while the cotton, duck or other materials employed in the manufacture of rubber belting can be had in any width. It is said that there is hardly a limit to the life of a good leather belt properly cared for, but to compete in cost with a belt like that of the Drapers it must wear over sixty years, or longer than one man is likely to use it.

* * *

FIRE-DEPARTMENTS are very variable in the quality of rubber goods demanded, some requiring the very best and others looking at the amount of the bribes that the rubber company in one way or another will give for a contract. Men are men, and the officer that accepts a bribe is tied up when he finds a lot of poor hose dumped upon him. Some fire-hose upon being turned inside out and doubled back upon itself will crack through, and of course if it is cotton-covered hose it is useless. Linen fabric will stand without a rubber lining because the water swells every fiber and packs the threads closely, but it is not the case in cotton. There are more qualities of fire-hose put out in this country than one can well imagine. The quality demanded by the New York Fire Department is of high standard, light in weight, of best Pará, and everything excellent without stint.



THE ELASTIC RUBBER HOUSE CO.

Our Dwelling Houses, constructed entirely of India-rubber, are especially recommended for settlements in regions visited by Tornadoes or Earthquakes. They are much superior in comfort and appearance to Cyclone Cellars, and as they gracefully adapt themselves to the fury of the elements, will outride the most severe Tornado. The elasticity of the floors makes them admirably adapted to dancing or athletic sports, and the saving in broken crockery alone is a large item in these houses. Falling down stairs is a luxury. For particulars, address

THE ELASTIC RUBBER HOUSE CO.

ELASTIC-ASBESTOS FACTORY CHIMNEYS A SPECIALTY.

[FROM SCRIBNER'S MAGAZINE.]

A BARGAIN.

WIFE—What do you think of that waterproof? I bought it down at Lacey's at the bargain sale on account of the fire.

HUSBAND—Is it damaged much by fire?

WIFE—Not at all by the fire; only damaged by the water.

[FROM "JUDGE."]

A MOVEMENT is under consideration in the two or three lines of the rubber business that make list prices and then allow discounts to do away with the system. The discussion on the subject is a heated one. Reasons for the continuance of the system are given at great length, and as in all progressive movements there is a great deal of opposition, so much so that it is doubtful whether any change will be made for the present. The great controversy is in the hardware trade, and as belting is sold to that trade, rubber-men are interested immediately, so far as that line is concerned. Boots and shoes are also sold that way. One or two dealers in expressing their opinion say with some indifference that the system is an antiquated one, and ought to be displaced. One of its chief advantages, however, is that an entire list can be changed at once without the expense of printing new catalogues, which would be necessary if net prices were given.

* * *

THE Chicago, Burlington & Quincy, Union Pacific, Atchison, Topeka & Santa, Fé, Pennsylvania, and a few other railroads have laboratories connected with their shops in which all rubber goods purchased by them are tested before use. In air-brake hose the pressure generally used is about ninety pounds, but the glib rubber salesman in his impressive way tried to beguile the simple-minded purchasing agent into the idea that his particular brand would stand 600 pounds, and backed it up with "guarantees." There was a mess of it when the several railroad companies returned a lot of burst hose, and the "angel of commerce" now knows whereof he speaks. One or two companies take special pains with this business, a very large and growing one. The railway companies rejected a quantity of endless belts which would not stand at the seams, and rubber companies have to work carefully now for that business. Railroad companies are hard customers to get, and can only be kept by eternal vigilance.

* * *

ACCORDING to a foreign journal, the most practicable method of joining narrow vulcanized rubber belts, both ends having been put together at a right angle, they are to be provided with two rows of holes, and strapped together. With broad belts, either a thin piece of leather or a piece of rubber belt is to be used on the back side, in order to strengthen the connection—the pieces used for this purpose to correspond in length according to the width of the belt, and sewed or riveted in place, and, in sewing, the belts should be placed on a belt stretcher, in order to avoid injury. They are also materially improved and made more durable by applying a coating composed of equal parts of black lead and litharge, boiled in linseed oil, a sufficient quantity of lac being added to insure speedy drying. If, from any cause, the rubber should scale off, the belt is to be coated anew; in case of any tendency to slide, the inside is to be moistened with linseed oil.

* * *

INSULATED WIRE men are making leagues of wire nowadays with nothing more for insulation than pressed manilla paper. This sort of insulation, it is claimed, does very well for incandescent wires. They also use a great deal of chicle, the prices obtained being very low. Fine Pará, however, is used in the best of work.

* * *

CUT through a piece of Pará rubber and the exposed parts will very soon assume a tinge almost black. This is true of all hydrocarbons, and is caused by their rapidly absorbing oxygen from the atmosphere.

THOSE (DARK) RUBY LIPS.

MR. RHINDER—Wha's dat rubber-boot hangin' on de do'-jamb fer?

MR. WILLETS—Sho! dat ain't no boot. I done hed a few words wiv Miss Blinksum, en she's went out inter d' hall t' pout.

[FROM "LIFE."]

INDIA RUBBER WORLD AND ELECTRICAL TRADES REVIEW

Published on the 15th of each Month by

THE INDIA RUBBER PUBLISHING CO.

No. 192 WORLD BUILDING, NEW YORK, U. S. A.

JNO. R. DUNLAP. H. C. PEARSON.

Vol. 7. NOVEMBER 15, 1892. No. 2.

SUBSCRIPTIONS: $3.00 per year, $1.75 for six months, postpaid, for the United States and Canada. Foreign countries, same price. Special Rates for Clubs of five, ten or more subscribers.
ADVERTISING: Rates will be made known on application.
REMITTANCES: Should always be made by bank draft, Post Office Orders or Express Money orders on New York, payable to THE INDIA RUBBER PUBLISHING COMPANY. Remittances for foreign subscriptions should be sent by International Post order, payable as above.
DISCONTINUANCES.—Yearly orders for subscriptions and advertising are regarded as permanent, and after the first twelve months they will be discontinued only at the request of the subscriber or advertiser. Bills are rendered promptly at the beginning of each period, and thereby our patrons have due notice of continuance.

Trade supplied by the American News Co. and all its branches.

Entered at New York Post Office as mail matter of the second-class.

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The "Albert Behrens" Circular.

THE day after the publication of the prospectus of the United States Rubber Co. there was mailed from New York a circular letter that has occasioned no little comment. The circular pretended to discuss in a dispassionate way the question of the desirability of the preferred stock of the company as an investment. It is not proposed here to enter into a discussion with the writer of that circular letter, who signs himself "Albert Behrens," but to simply inform him of the manner in which his gratuitous communication was received. As no office address was given the manufacturers, investors, bankers, and others who received the circular turned to the New York City Directory, only to discover no name recorded there that could fit the author of the circular. The conclusion reached next was that the letter was anonymous, and while it evoked the contempt that an anonymous letter always must, curiosity was not satisfied and speculations as to who did write it, and why it was written, were the order of the hour.

A consensus of opinion on these points gives the following results: The circulars cost considerable money, and as they were antagonistic only to the United States Rubber Co., the writer must be one who would presumably be injured by the success of the company. That the effect was beneficial to the company rather than detrimental, because of its anonymous character, and apparent malice. That while most of the men interviewed thought they could give a shrewd guess as to the source from whence the letter emanated, they did not care to be quoted and would let the secret work its own way out into the light. That it was powder wasted, anyhow.

Giving the New Companies a Start.

SOME discussion as to the nature of the new mechanical rubber company has arisen over the election to places in its provisional directory of several directors in the United States Rubber Co., and the reported choice of Mr. Hotchkiss as president, in place of Mr. John H. Cheever, of the New York Belting and Packing Co., who was supposed to be slated for that position. Naturally the officers of the new company are loth to give out their plans in advance, but this apparent anomaly is brought about by the following state of affairs. A director in an incorporated company cannot legally sell or dispose of its property to another company of which he is also a director. This is a restriction laid down in court decisions in the supposed interests of the public, which has sometimes been forgotten by the officials of important corporations, to be followed by no small annoyance.

If the directors of the several mechanical rubber-goods concerns entering the new company should have been at the start directors in the latter, there could have been no legal transfer of the stock. It has been arranged, therefore, that the directors in the United States Rubber Co. shall act in that capacity for the new concern at present,

since the relations between the two are friendly and not of a competitive nature. When the transfer of stock has been completed the present directors of the mechanical-goods company will retire, being succeeded by those who are now in active control of the corporations to be absorbed.

The United States Rubber Co., in a similar position, had to proceed very cautiously. A "cranky" director might have made no end of trouble with the details, so there was any amount of "backing and filling," resignations, elections, adjournments, and piecemeal purchasing, so that outsiders became convinced more than once that the whole matter had fallen through. It would seem to be, in corporation matters as elsewhere, an easy thing to sell and buy, but when one is performing either of those operations from himself with different partners it is a difficult matter to do so without violating the statutes for such cases made and provided.

Each of the temporary directors has to own some stock, which is an expensive item for an officer who is to serve for only a few days; but the ownership must be *bona fide*, and every transaction must be legal and a matter of record, or the whole structure falls. The legal part of the transactions are the most perplexing. One can imagine a business man going to his lawyer and stating that he is about to buy out some property,—a corporation, or a half dozen of them,—and putting the question "Can I do it?" But it is ten to one that the attorney will say: "I will go up to the Law Library to-morrow and examine the statutes of New Jersey, Illinois, Ohio, Connecticut, and Massachusetts, and see what difficulties are in the way; then I will look over the decisions of the United States courts, and will also see what is before them now." Such an amount of labor is stupendous in itself, and is augumented by the probability of finding some pitfall which has to be avoided by *thinking it out*. Besides, no mind can map out every detail ahead, and do all this work at the start, so that the statutes have to be consulted time and time again.

In every large purchase of corporate property there is a good amount of what might be termed original work, or something which has never been experienced before. So the promoters are like men walking in the dark, on guard for the happening of the unexpected at any moment. The annoyances generally come from injunctions sprung by small stockholders, which though they may be without warrant, are none the less annoying and full of delay. This is the reason why there is so much secrecy in everything that is done in the preliminary transactions. It is the policy of the insiders to keep the outsider busy guessing and thus lessen his time and opportunity for mischief, and the swapping of corporations is in every sense of the word a totally different affair from that of trading jack-knives.

The organization of the United States Rubber Co. having been completed, and the various obstacles having been overcome, it is natural that some of those actively concerned in the preliminary work should have been called upon to give the new mechanical company a start. The details of organization may be expected to be of exactly the same character as of the concern whose stock has just been placed on the market.

Rubber Goods For Policemen.

ONE of the Boston newspapers has been leading a crusade against the policeman's club, which has brought out the suggestion that police departments should adopt the rubber billy as a substitute for the locust club. The suggestion seems to be favorably regarded by some of the police officials of Boston, the idea being that the rubber club would be as efficient as a means of protection, while less liable to do harm in its use. This is not an entirely new idea, since at least one India-rubber police club has been patented at Washington, and a firm in St. Louis are prepared to manufacture it. It is of interest to note that in New York city police regulations have recently been adopted dispensing with the old-time locust club entirely, and equipping the patrolmen with a much lighter stick for night use, to be carried in a pocket. The new Superintendent of Police, Mr. Byrnes, is on record as opposed to the use of the locust stick, and the success of his forces in managing the immense crowds which thronged the streets during the recent Columbian celebration in New York, without using clubs, did much to convince the public of the soundness of his ideas on this subject.

Germany's Growing Rubber Trade.

THE importations by Germany of crude India-rubber and Gutta-percha for the first eight months of 1892 show a considerable increase over the figures for the same period of 1891. The following comparative statement is derived from official sources:

	1891.	1892.
August imports in pounds	738,100	804,540
January to August	6,179,680	6,706,260

It may be of interest to note that after deducting the exports for the eight months in each year, the amount remaining for stock and consumption was 4,984,560 pounds in 1891 and 5,237,100 pounds in 1892.

The exports of manufactures of rubber are shown in the table below for corresponding periods in the two years, all figures relating to pounds:

	January-August.	
EXPORTS.	1891.	1892
Hard Rubber in Mass	20,240	47,740+
Rubber Threads	155,100	184,140+
Coarse Soft Rubber Goods	1,476,200	1,548,140+
Fine Soft Rubber Goods	769,780	1,263,240+
Finished Hard Rubber Goods	683,980	701,580+
Rubber Toys	1,095,380	492,360—
Tissues Woven with Rubber	470,800	511,280+
Elastic Hosiery	16,940	23,100+
Waterproofed Hempen Tissues	122,100	144,980+
Unclassified Wares	1,100	1,100
Total	4,811,620	4,917,660+

[The signs + and — indicate Increase and Decrease.]

The most striking feature of this table is that, while activity in all other features of the rubber industry is apparent, a great falling-off has occurred in the rubber-toy trade. With regard to the imports of manufactures of rubber, there has been some increase in the various classes of goods mentioned in the table, with the exception of rubber thread, finished hard-rubber goods, and fine soft rubber goods, all of which show a decrease.

Weddings in Rubber Circles.

A PLEASANT social event in which the fashionable element of New Brunswick, N. J., displayed more than a passing interest, was the wedding on the evening of October 26, in Christ church, of Miss Anna Holcombe Deshler and Mr. Frank K. Runyon, the Rev. E. B. Joyce pronouncing the service. The bride, a tall and beautiful girl, is the daughter of James Deshler, late secretary of the New Jersey Rubber Shoe Co., and now a director in the United States Rubber Co. The man of her choice is a member of the New Brunswick Board of Aldermen and of Governor Leon Abbett's New York law office. The reception at Mr. Deshler's residence, following the ceremony, was largely attended, the Governor being among the guests.

In Trinity church, Boston, Miss Kitty Converse and Mr. Lester Leland were married on the evening of October 25, the Rev. W. Dewees Roberts reading the service. The bride, whose baptismal name is Frances Eugenia, is the daughter of the Hon. Elisha S. Converse, of the Boston Rubber Shoe Co. Mr. Leland was formerly a Boston man, but now resides in New York. At the request of the bride the number of guests was limited to a few particular friends, and to avoid a sense of emptiness in the great church, a chapel of palms from the Converse conservatories had been erected in front of the chancel just large enough to hold the wedding party. It was reached through a path of arched palms leading from the entrance to the church. Later there was a reception at No. 348 Beacon street, the Boston home of the Converses. The guests included a large number of people prominent in Boston and out-of-town society, among whom were a number of recent brides, including Mrs. Harry Converse (*née* Parker) whose marriage to Mr. Converse's son was one of the events of last season.

At Des Moines, Iowa, since the last issue of this journal, Miss Eva Getchell and Mr. F. S. Jaquith were married. The bridegroom is a son of B. F. Jaquith, the rubber boot and shoe agent. The wedding was an event enjoyed by a large number of guests, and the newly-married pair started at once for the East to spend the honeymoon.

The home of Ferdinand Cook, paymaster of the Woonsocket Rubber Co. at Millville, Mass., was the scene of a pretty wedding on the afternoon of October 14. The bride was Miss Elma Ten Eyck, daughter of Mrs. Cook, and the bridegroom George W. Adams. They will reside in Woonsocket.

Rubber-Men at the Carriage Convention.

THE twenty-second annual convention of the Carriage-Builders' National Association, held in Buffalo, N. Y., on October 25, 26, and 27, was a great success, and the rubber trade was more fully represented than at any previous convention. The manufacturers of rubber carriage-cloth are each year finding an increased demand through the carriage-builders, who all now agree that for a moderate-priced buggy-top nothing will give the appearance and service as well as rubber, and with the exception of the very best and highest-priced leather tops the rubber covering has practically superseded the former low-priced leather top. Handsome exhibits showing the different grades and imitations of leather in finish were made by the Fairfield Rubber Co., Boston Rubber Co., and Cable Rubber Co., the first-named company having an especially attractive display in their colored upholstery rubber cloths. Bicycle-tires for trotting sulkies and improved rubber springs were also shown. A great many of the concerns represented had souvenirs for the visitors and Mr. E. R. Burley, Chicago agent, and Mr. William H. Corner, Jr., New York city agent for the Boston Rubber Co., were kept busy distributing a souvenir gotten out by their company in the shape of an improved pencil-sharpener. The following manufacturers of rubber carriage-cloth were represented :

Joy Rubber Co., Newark, N. J., by Mr. L. Joy.

Fairfield Rubber Co., Fairfield, Conn., by Messrs. W. W. and E. W. Harral.

Goodyear Rubber Co., New York, by Mr. David R. Westervelt.

Boston Rubber Co., by Messrs. E. R. Burley and William H. Corner, Jr.

Cable Rubber Co., Boston, by Mr. W. J. Cable, secretary, and Messrs. F. F. Silliman, C. A. Rosengren, and Eugene Cook.

L. C. Chase & Co., Boston and New York, by Mr. Bishop.

The tendency of the manufacturers appears to be to imitate the grain of leather as nearly as possible, and some beautiful leather-grain rubber was shown. This finish is more popular than ever, and there is now more demand for it than for the older shot-pebble.

The Taunton Oil Cloth Co., of Taunton, Mass., and the Evans Artificial Leather Co., of Boston, though not exactly in the rubber line, had handsome exhibits, and the well-known face of Mr. C. T. Newbury, of the former company, and Mr. Walter N. Dole of the latter, were recognized by their many friends as-old carriage-convention men.

Rubber at the American Institute Fair.

THE manufacturers of rubber goods have not been much given of late to making displays at fairs, either large or small, and they have not made an exception in the case of the American Institute Fair, now open in New York. The Waterbury Rubber Co. have a very good display of their Sphincter hose. An artificial limb exhibited by another firm has a rubber ball in the ankle-joint. There are also a few rubber stamps on exhibition, but beyond that there is nothing visible in the shape of products of caoutchouc. Rubber enters into so many articles that a superficial observation of this character may be too sweeping, but the interests of the trade are conspicuous by their absence in the exhibition in question. The Institute fair is apparently more successful this year than last, but it runs quite exclusively to household articles of wood and metal and a good display of machinery. In some of the earlier issues of THE INDIA RUBBER WORLD several references occurred to exhibits of rubber goods at the first American Institute Fairs. The medals awarded there were once treasured as the highest evidences of merit. In those days, however, the general stores were not, as they are now, perpetual fairs of great interest, and there were no such stores devoted to specialties such as every rubber firm maintains to-day. The public is not now obliged to pay admission to a temporary exhibition to see displays of rubber goods.

Mexican Rubber Items.

THE exports of India-rubber from Mexico for the first half of the present year amounted in value to $29,913.42 against a value for the same period of last year of $41,702.15.

The schedule of import duties in Mexico has undergone some important modifications of late, but none of the changes affect manufactures of India-rubber.

The British steamship *Kaffir Prince* arrived at Philadelphia on October 23, from Mexican ports, with a cargo of rubber and other tropical products.

Some Farming Experiences in RUBBER BOOTS with

Published by the COLCHESTER

The Farmer rich in stock and soil,
His land producing wheat and oil,
Wears rubber boots 'mid daily toil,
And finds "Colchesters" best.

The Farmer poor, who labors long,
From morning light to evening song
In "Colchester" boots finds noth'ng wrong,
And shows them to his friends.

The Farmer fat in wind and limb,
Needs extra strength to carry him
Yet wants a boot both neat and trim,
"Colchester's" just the thing.

The Farmer lean, whose legs do seem
Like poles stuck up to grow the bean,
In "Colchester" Boots is always seen,
Because they fit him best.

"A Rubber Boot is a life preserver." JAMES G. BLAINE.

"I always wear 'Colchester Boots' when duck hunting."
BENJAMIN HARRISON.

"You need brains and 'Colchester Boots,' when you go trout fishing."
GROVER CLEVELAND.

"Nothing gives the American people so much Protection, as the 'Colchester Spading Boots.'"
McKINLEY.

Mention the India Rubber World

Confidential Communications from Distinguished Personages.

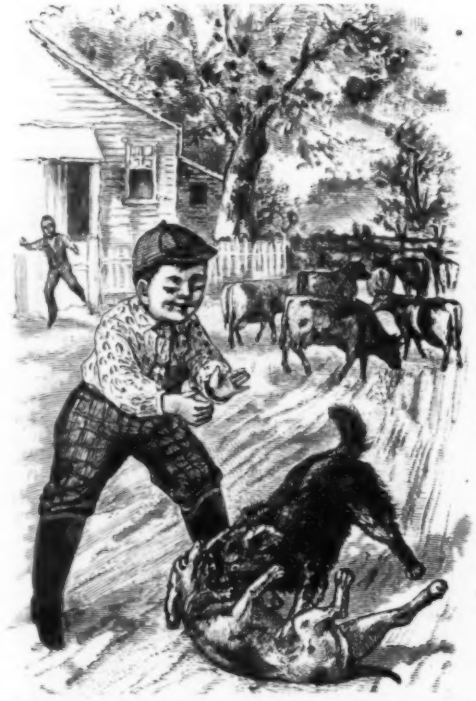
RUBBER CO., COLCHESTER, CONN.

The Farmer Crank is sour and lank,
On first class goods doth seldom bank,
Buys Rubbers of inferior rank,
And quickly wastes his money.

The Farmer's wife, spends half her life,
Darning socks where holes are rife,
Bad fitting boots chafe like a knife,
Not so "Colchester" brand.

The Farmer's boy, outgrown his toy,
In manhood's work dothfind employ,
And like his "dad" has constant joy
Wearing "Colchester" Boots.

So Farmers all, just heed our call,
The Rubber market overhaul,
Compare our goods and after all,
Buy our "Colchester" Boots.



"The Agriculturists of this country will never attain their full prosperity until they shall have worn 'Colchester Boots.'"
JEREMIAH RUSK.

"A poor rubber boot provokes profanity. I have not sworn a word, since I have worn 'Colchester Boots.'" TALMAGE.

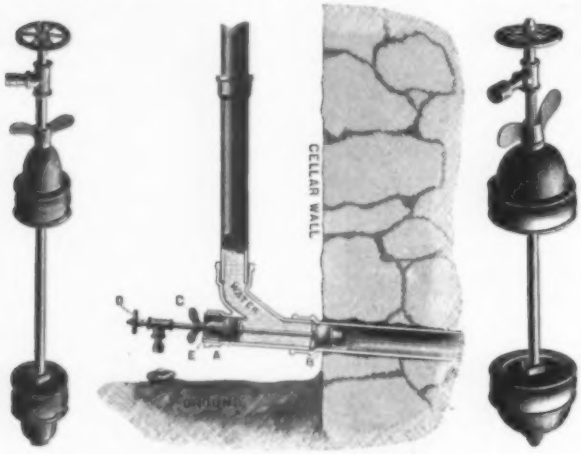
"The greatest discovery of any age is that of the 'Colchester Spading Boot.'"
CHRISTOPHER COLUMBUS.

"The 'Colchester Rubber Boot' knocks 'em all out, and is the greatest hitter I know of, excepting Corbett. Spades is trumps every time."
JOHN L. SULLIVAN.

when you order "SPADING BOOTS."

NEW GOODS AND SPECIALTIES.

A GREAT many people wonder if the plumbing in their house is efficient, and yet have no ready means for determining whether it is so or not. A Worcester inventor has produced something that solves this problem in a very simple manner. He calls it the Excelsior Double Testing-Plug, and any householder by putting a Y-branch in the drain of his house can easily test the plumbing at any future time and be sure that no settlement of the foundations has disarranged it. It can be water-tested by taking out the brass clean-out



EXCELSIOR DOUBLE TESTING-PLUG.

screw and inserting the testing-plug. The plug after being inserted in the Y is expanded in such a way as to allow the whole stack of pipe to be filled with water, which consequently tests every joint in the building, including the first joint on the inside of the cellar wall. After testing, the rubber plug *B* being released by the hand-wheel *D*, all the water in the pipe is very quickly passed off into the sewer without a drop running into the cellar; then the plug *A* being released by the nut *C*, the whole plug is removed and the brass clean-out screw is put in at *E*, ready for any stoppage that may occur. Architects have indorsed this testing-plug very warmly, and plumbers are rapidly adopting it, as their work is made so much the cleaner than when they emptied the pipe in the usual way. Another advantage in this double arrangement is that when testing the stack-pipe the pipe can be filled until the leak is discovered; then by a simple turn of the wheel *D* the water can be lowered to a point below the leak without disconnecting the supply-hose. Manufactured by H. A. Desper, Worcester, Mass.

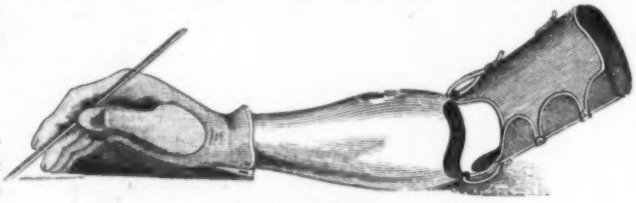
Vanderman's Elastic Lead-Pipe Bender.

IT is easy enough to bend lead-pipe, but to do it without kinking and to have the offsets and bends perfectly symmetrical is another matter. In order to do this satisfactorily a practical

plumber has invented something that is having a ready sale and of which plumbers are saying much in the way of praise. It is simply a long piece of vulcanized rubber, which is shown at the top of the accompanying illustration. This is drawn into a straight piece of lead-pipe filling the orifice, and if then the pipe is bent in any shape, either for making a trap an offset or bend, it can be done very quickly and there is no chance for a kink or an unsymmetrical curve. One great advantage in it is that it permits of lighter grades of waste- and vent-pipes being used, and is also convenient to handle and will last for a lifetime. It is made in sizes for 1-inch, 1¼-inch and 1½-inch pipe, and is two feet in length. It is so compounded as not to be affected by oils or acids, and by means of a string attached to an eyelet at either end can be run through a pipe, no matter what its length, and the bend easily made. In the directions that accompany the bender, one point in particular will be worth considering, and that is how to get the rubber-bender out after the work is done. This can be done very easily if the bender itself, or the inside of the pipe, is lubricated with soap and water. Manufactured by William Vanderman, Willimantic, Conn.

Rubber for Artificial Feet and Legs.

THERE have been for years all sorts of appliances for those who through accident have lost the use of hand or foot. Most of these have proved awkward and many times painful in their application, and it was not until rubber was called into use that a perfect imitation of the human hand or foot was pro-



ARTIFICIAL FOREARM, WRITING.

duced. That this imitation is perfect not only in its looks but in its results is attested by the fact that men, women, and children

ARTIFICIAL LEG.

run, skate, dance, and toil with one and sometimes two rubber feet. This is accomplished because the movements of the rubber foot more closely approximate the movements of the natural foot in walking and running than the movement of any mechanical ankle-joint on a wooden foot. Suppose a man has one rubber foot; as he advances he touches the heel to the ground first, and the weight of the body being gradually applied to the rubber foot causes the rubber heel to compress sufficiently to bring the plantar surface to the ground at the moment when the body is nearly over the leg; as the body is thrown forward the weight is carried from the heel to the toes, and the heel being relieved of its weight, its elasticity causes it to resume its shape; this assists in urging the body forward and throws the entire weight on the toes; the heel then elevates and continues to do so until the step is nearly

completed, when the wearer is simultaneously placed in such a position as to throw his weight forward of and heavily on the ball of the foot; this gives the body a propulsion and urges the walking. Not only are feet made of rubber, but artificial legs. Those for adults weigh from 3½ to 6 pounds, depending upon the size and requirements. That for a delicate lady of ordinary size would weigh about 3½ pounds, while for a large and robust man one could not be made of lasting strength to weigh less than six pounds. Another point with the rubber foot and leg is that there is no

THE NEW PATENT FOOT.

ankle articulation to wrinkle or break the boot or tear the stocking. At the toe the wrinkling is perfectly natural and gives the shoe a natural appearance. Indeed it is a matter of fact that the rubber foot, although covered with shoes and stockings, wears out fewer of them than does the natural foot. The latest improved rubber foot is the one shown in an accompanying illustration. This is made of rubber of a very spongy, light, and elastic character; the upper part is made of willow-wood, but it was found that in many cases where the wearer bore heavily on the toes an arrangement was needed to cause them to spring back into position, and to accomplish this strips of duck made of strongly-frictioned cloth have been vulcanized into the rubber and work to a charm. The rubber leg is made more particularly for those who follow a vocation that requires them to stand or walk in the water for any length of time, but who in the past have been obliged to use peg-legs, as there was never a leg heretofore that would effectually resist water, as the joints and springs in the ankle would rust and break and all the glued parts would loosen and become detached. This, however, has been overcome in the waterproof leg that is now being manufactured. In it the core of the foot and the body of the leg are cut from one piece of wood, with the grain in the foot at about right angles to the grain in the leg and continuous with it; this is done to give the leg strength. The rubber foot is secured to this core in the usual manner. As there are no glued or attached parts it cannot be affected by water or perspiration. Manufactured by A. A. Marks, No. 701 Broadway, New York.

The "Oliver Twist" Penholder.

DID you ever watch a literary personage attempt to remove a rusty or broken pen from an ordinary penholder? It is a simple thing to accomplish, and the careless air of the victim proclaims it. With the holder in the left hand, the point of the pen is seized, after being wrapped in paper, and a dextrous pull is given. The paper slips off and the pen remains. Another pull, and the edge of the pen cuts through the paper and wounds the finger ends. First blood for the pen. Slightly flushed, the paper is thrown aside, and with bare fingers the fight is continued. At the next pull the inky scale comes off on the fingers, but the pen stays where it was. Finally, filled with wrath, uttering maledictions, and perspiring freely, the writer conquers; the pen is extracted and a sigh of relief announces the victory. That was the old-fashioned, crude manner of removing useless pens. The modern way is so easy, so simple, that one is filled with amazement that the world of writers suffered so long. To tell the truth this nineteenth-century style is so simple that it is difficult to describe it. All the writer does is to give the end of the holder a slight twist and the pen drops out, without being touched by the fingers. There is, however, but one penholder that accomplishes this, and it is well named the "Oliver Twist." Two illustrations accompanying this show, first, the pen in position for writing, and second, the pen after the wood has been twisted and it is about to drop into the waste-basket. A patent for this useful novelty has been applied for, and the makers invite everybody to send for samples and prices. Manufactured by the Goodrich Hard Rubber Co., Akron, Ohio.

"Tyrian" Acid-Oil Atomizer, No. 2.

THIS appliance throws a fine spray, and will atomize any of the remedies used in diseases of the lungs, throat, nose, ear, or eyes. It sprays any of the alkalies, nitrate of silver, oil of vitriol, or any chemical that will not affect glass. There is nothing in its construction to contaminate the most delicate perfume or the most powerful acid. The ingredients used do not come in contact with metal, rubber or leather; consequently the spray is pure. This instrument is so simple in construction that it cannot get out of order. If desired the tube can be readily removed by simply drawing it from the cap, placed in a test tube, a tumbler or a teacup; only have the rubber bulb attached to it, and it will throw just as fine spray in either of them as it does from the bottle accompanying it. It is especially adapted for spraying vaseline, or any of the oils or ointments used in the treatment of inflammation of the throat or nose. It is properly termed an all-around atomizer. The neck of the bottle is made with a screw, and sufficiently large to admit vaseline. Manufactured by the Tyer Rubber Co., Andover, Mass.

"TYRIAN" ACID-OIL ATOMIZER.

Rubber in an Umbrella-Rack.

AN umbrella-rack that takes but little room and that is rapidly being adopted consists of a metal frame secured against the wall, from which project arms about two inches long. At the ends of these arms are rubber wheels which are set horizontally, their circumferences almost touching each other. The handle

THE "OLIVER TWIST" PENHOLDER.

PENHOLDER WITH THE PEN RELEASED.

of the umbrella is slipped between two of these wheels, which spring into position again after it has passed, and hold it upright against the wall. The idea is an ingenious one and so simple and inexpensive that it seems bound to be popular.

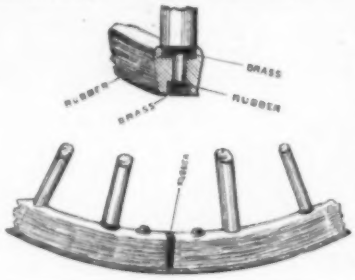
The "Portia" Waterproof.

THE primary use of the waterproof garment is simply to shed water, and this may be accomplished just as effectively by uncouth, ill-fitting garments as by any other. It is but a few years since a line of rain-shedders were put upon the market and readily sold, that to-day could not find sale in the most plodding and old-fashioned community that the country contains. In other words, it has been found that beauty, grace, perfect fit, elegance in texture, and color can belong to a waterproof garment in the same measure that they are a part of a ladies' cloak. This state of perfection has not been reached in a day or in a year, however, but has been an evolution. A house noted for its correctness in taste and its faculty for securing a cloak fit for a ladies' mackintosh gives to the trade this fall a new garment called the "Portia." The head of the house, speaking of it, said: "Our taste and the fit of our garments have always been praised, and we have been told many times that in those particulars we led. Personally, however, while I felt that we did as well as any one, I was not satisfied, and it is not until this year that I believe that a perfect garment has been produced." The "Portia" is made from any of the 200 or more styles of the cloth that are carried in stock, which vary from the finest broadcloth to ordinary grades of cloth. The garments are silk-stitched and have a new feature in the silk-worked button-holes that will at once catch the feminine fancy. Instead of having them worked by hand, a special machine is employed to do the barring, and the result is excellent. Made by the Clifton Manufacturing Co., Franklin street, Boston.

THE "PORTIA" WATERPROOF.

A Rubber Cushion for Carriage-Wheels.

WHILE the use of the pneumatic tire has given a large impetus to the use of rubber in wheels, it will hardly do to presume that some of the older forms are to be superseded. The rubber tire has been known for years, without making much advance towards an universal use. The application of rubber to carriage-wheels in still another way has been in use for some years. It is the setting each spoke practically into a rubber cushion, which is imbedded in the wood forming the rim of the wheel. The cushion is formed in this manner: The spoke upon entering the rim passes through a washer of rubber encased in an envelope of brass, which latter is in the form of a washer also; the spoke passing through these layers comes again in contact with the wood, and passes on until within a short distance from the tire it enters into a solid plate of rubber, which in its turn rests upon a piece of brass, and that in contact with the tire. The application is a simple one, and judging from the testimonials of carriage-builders who have used them in New York and Philadelphia since 1888, the device is a success, the advantages of its use as claimed may be noted. The rubber cushion is fully protected by its casing of brass. The fiber of the wood of the rim is not crushed under the shoulder of the spoke, which is seen in the ordinary wheel by a bulging out of the rim, making what is called a rim-bound wheel. The wheels do not require rehooping until the tires are worn out. There is no contraction or expansion of the wooden parts of the wheel which is not taken up by the yielding rubber, thus insuring an evenness in the relation of the spoke to the rim at all points. In the use of rubber in wheels, the rattling of the vehicle or the noise is obviated, the jerky motion of side-bar wagons is wanting, and in the case of heavy vehicles there is a peculiar cradle movement very pleasant but not readily described. The device under consideration has the peculiarity of rendering the joints water-tight. The inventor of this rubber equipment for wheels is A. McIntosh Williamson, of Philadelphia, an old carriage- and wheel-maker.



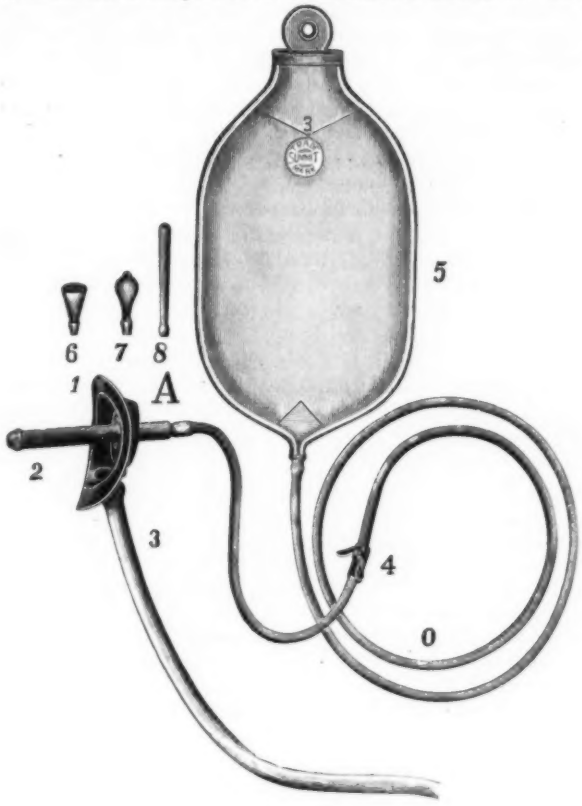
A RUBBER CUSHION FOR CARRIAGE-WHEELS.

The Albert Combination Syringe.

OF the numerous meritorious features of this article, it may be mentioned that as it is without valves, it is not liable to get out of order. It may be used as a fountain syringe or as a nasal douche. A great amount of force may be obtained at the option of the person using it. Another good feature is that it may be filled and carried to any point before making the application, without leaking a drop. The process of filling is so simple that a child can do it. The principle is that of a siphon, the syringe being filled by removing the hard-rubber pipe from the tube, and rolling the bag tightly upon itself, inserting the end of the tube into the liquid, and letting the bag fall below the vessel containing the liquid. The syringe will fill in ten seconds, and after the hard-rubber pipe is inserted it is ready for use. It is valuable especially as a traveler's companion. It is also very useful in cases of sore throat, being especially constructed for this purpose, as well as for other local disorders of similar nature. It is so made as to be easily fastened on and retained in any position where it may be required. It is, in brief, an all-around family syringe, and the price at which it is sold brings it within reach of all. Manufactured by the B. F. Goodrich Co., Akron, Ohio, and sold by the trade.

Foote's New Syringe.

ANYTHING really new and worthy of commendation in atomizers or syringes is a rarity, and this state of affairs exists simply because so much thought has been put upon this line and such excellent results attained. In introducing the Foote syringe two points are to be noted. It is new,—the latest novelty on the market,—and it is so practical that its excellence is seen at a glance. The point of departure from the ordinary fountain lies in the portion of the illustration marked *A*. This



represents a movable irrigating tube passing through a soft rubber packing in the top of a shield; 1 represents the shield, 2 the irrigating pipe, and 3, the large waste-pipe. With this combination it is not necessary to move a very sick patient at all, as cleansing can be accomplished without the least danger of wetting the bed linen. The shield alone can also be used as a urinal by putting a cork in the orifice through which the irrigating tube passes. The syringe has in addition to this new and important feature, all of the usual accessories of the perfect fountain syringe:—eye-spray pipe, nose- and ear-douche, rectum tube, etc. It has been universally approved by physicians and is to-day in use in the principal hospitals in New York. Price $5, prepaid, to any part of the United States or Canada. Manufactured solely by the B. F. Goodrich Co., Akron, Ohio.

Minor Mention.

A DRESS-SHIELD invented by a Southern lady is the subject of a recent patent. It is made from the membranous lining of the stomach of an ox, and has a waterproof surface on one side and an absorbent surface on the other. The same substance is known commercially as gold-beater's skin.

—McKesson & Robbins (New York) are making a new atomizer which will shortly be put upon the market.

Customs Appraisers' Decisions.

IN a late decision of the general appraisers with reference to cotton-elastic webbing,—Captain Sharretts delivering the opinion,—the following points appeared: The goods were assessed at a duty of 40 per cent. *ad valorem*, while it was claimed that they should carry a duty of only 30 per cent., as being a manufacture of India-rubber in which India-rubber is the component material of chief value. The India-rubber threads which enter into this webbing, and which make the material elastic, are found to form the component material of chief value. But "cotton elastic" webs, or webbing, is a commercial term applied indiscriminately to merchandise woven in a particular manner and having India-rubber or cotton as a component material of chief value. Congress has adopted the trade name for these goods and especially provided for them by that name in paragraph 354 of the new Tariff. Paragraph 460 provides only for manufactures of which India-rubber is the component material of chief value, not elsewhere especially enumerated or provided for in the act. This decision renders the goods assessable at 50 per cent. *ad valorem*.

In the decisions of the General Appraisers as to India-rubber goods it has been found necessary to give the customs officers a basis of values upon which to form their calculations. For the present India-rubber is placed at $1 per pound; black silk at $2.20; colored silk at $2.92; and cotton at 38 cents. This decision applies to webs, braids, and cords composed of silk and India-rubber; cotton and India-rubber; and silk, cotton, and India-rubber.

Quite different is the decision of the General Appraisers with regard to silk elastic cord and braids from that of cotton elastic. Congress did not provide for silk elastic cords and braid by their trade names and only spoke of them when silk is the component material of chief value. When India-rubber is the component material of chief value they fall under that schedule.

A Rubber-Shoe Factory in Sweden.

A CORRESPONDENT of THE INDIA RUBBER WORLD, writing from Stockholm, Sweden, gives some information concerning the Helsingborg rubber-shoe factory, which began operations last year, having some $47,500 capital. For awhile great difficulty was experienced in securing a satisfactory product. A more capable foreman having been secured lately, it is expected that better results will be obtained. About a hundred persons, mostly women, are now employed, and the daily production is 600 pairs of shoes. No other goods are manufactured. Our correspondent states that American machinery was used at the beginning, but that the company have ordered new machines from Scotland.

The Rubber Pavement in Edinburgh.

THE inlaid rubber pavement, laid down three years ago by the North British Rubber Co., Limited, outside their Princes-street warehouse, in Edinburgh, is described as "a beautiful and a most effective production in India-rubber, but unfortunately, owing to its high price, there has been so far a very limited demand for it." Some pieces of this pavement have been subject to very severe wear, for three years past, exposed to all sorts of weather, without any perceptible difference in appearance as regards wear. The company are still hopeful, in case the question of durability should be determined beyond doubt, of reducing the cost to a figure that will lead to its wider use.

BRIEF ABSTRACTS OF RECENT RUBBER PATENTS.

AMONG recent patents issued by the United States Patent Office, embodying applications of India-rubber or Gutta-percha to a greater or less extent, have been the following. It is not practicable here to do more than to note the use of rubber in each case, with sufficient detail to enable those who are interested to decide whether or not to look into any particular patent more fully :

RUBBER CLOTHING.

No. 484,945.—Combined Cape and Cap. Albert T. Aldrich, Worcester, Mass.

A combined cape and cap, comprising a sleeveless cape, close-fitting at the shoulder portions and having wide flaring skirts and a pocket-opening in front, and a neck portion secured to the upper edge of the cape and provided with a front opening forming a continuation of the placket-opening in the cape, and a cap secured to the neck portion.

SHOES.

No. 483,289.—Waterproof Shoe. Edward Reche, Providence, R. I.

The shoe herein described having the waterproof covering of the size of and applied to the outer surface of the inner sole, the upper, and a waterproof layer turned over upon the outer surface of the inner sole and its covering, and the outer sole applied over all and the parts united in the usual way.

DENTAL RUBBER.

No. 484,046.—Rubber Dam. Charles P. Pitman, Freehold, N. J.

A dentists' rubber dam provided with a raised elastic bridge and perforations at the sides of the bridge.

ELECTRICAL APPLIANCES.

No. 483,235.—Electric Cable. Theodore Guilleaume, Cologne, Germany.

In an electric cable, a strip of non-conducting material twisted about its own axis to form spiral grooves or air-channels and provided with a radially-projecting part which can be laid over the said grooves or channels for the purpose of closing them.

No 483,718.—Telephone-Receiver. Ferdinand Gross, Montreal, Canada.

The combination, with a telephone receiver, of a soft-rubber air-cushion held in place with one side bearing against the face of such receiver by a detachable flexible connection.

No 484,045.—Electric-Cable Splice. Frederic A. C. Perrine, Trenton, N. J., assignor to the John A. Roebling's Sons Co., same place.

1. An unfilled electric-cable splice having each spliced conductor surrounded by a sleeve of non-absorbent paper or similar non-absorbent material and having a casing outside the group of spliced conductors. 2. An unfilled electric-cable splice having each spliced conductor surrounded by a sleeve of non-absorbent paper or similar non-absorbent material and having a covering of non-absorbent paper or similar non-absorbent material about the group of spliced conductors and an outside casing.

DRUGGISTS' SUNDRIES.

No. 483,338.—Screw-Stopper for Water-Bags. George H F. Schrader, New York city.

A screw-stopper for water-bottles, consisting of an inverted hollow cup having a handle at top, externally screw-threaded and having an annular lower edge constructed with a rabbet, in combination with a substantially-flat disk having a stud reverted to its center and constructed with a beveled outer edge fitting within the rabbet of said cup, closing the open end thereof, and adapted when the edge of said cup is turned against the beveled edge of said disk to be thereby secured to said cup to form a hollow body, and a washer sprung over said stud and lying against said disk and the lower edge of said cup, whereby said washer overlies and protects the joint between said cup and disk.

No. 483,435.—Atomizer. Harley M. Dunlap, Battle Creek, Mich.

In an atomizer, the combination with a bottle of a head secured in the top thereof, the head having parts opening from the bottle through its sides and adapted to connect with an air-supply bulb, a reservoir of air or other gas, and an inhaler-mask and a spraying-tube secured in the supply-part and extending downward into the bottle.

No. 483,546.—Atomizer. Myer Dittenhofer, New York, N. Y.

An atomizer attachment comprising an interior tube for conveying the liquid and an exterior tube for receiving the air, the latter covering and protecting the interior tube throughout substantially its entire length and being attached to and removable with the fitting, both of said tubes being detached from the bottom of the atomizer.

No. 484,811.—Nursing-Bottle. Otis K. Newell, Boston, Mass.

The combination, with a nursing-bottle, provided with an opening having an outwardly-extended lip or flange, of a vented cap consisting of a body portion, inserted into the bottle through the opening and provided with a normally-closed vent or opening and a rim fitted over the flange or lip.

No. 485,093.—Bottle Stopper. Joseph D. Mars, Albuquerque, N. M.

The bottle-stopper consisting of the elastic disk and retaining-buttons having upwardly-projecting divergent shanks bent to form loops at the upper ends with four sections or legs disposed, as described, to bear equally against the inner periphery of the bottle-mouth.

No. 485,107.—Vaginal Syringe. Thomas H. Maddux, Baker, La.

A vaginal syringe consisting of a tube having a tapering head with holes in the end thereof and a groove at the base of said tapering head with holes from the interior of the tube to the exterior thereof in said groove, a perforated stopper with a check-valve preventing the return of liquid through said stopper, the said stopper being adapted to close said holes and also to close the mouth of the tube, and a rubber pouch or jacket having holes in its base, adapted to fit tightly at each end and loosely in the middle over said tube.

MECHANICAL GOODS AND APPLIANCES.

No. 483,302.—Hose-Clamp. Austin R. Dickinson, Syracuse, N. Y., assignor to the Syracuse Specialty Manufacturing Co.

As an improved article of manufacture, a hose-clamp formed of a single band of sheet metal perforated at each end and tongues extending from one or both sides, said band being bent circular shape and its perforated end portions bent radially outward, and the tongues continued in the same line of curvature with the band and extending under the opposite end of the band.

No. 483,390.—Hose-Reel. Samuel F. Reynolds, Auburn, N. Y.

In a hose-reel, the combination, with the shaft, the reel secured thereon, and the bearing for said shaft, of a removable box-section provided with a top extension recessed vertically to receive a friction-bar and a pressure-spring and recessed longitudinally to fit over the shaft and receive a friction-plate upon the shaft, a friction-bar pressure-spring, and a friction plate.

No. 483,673.—Hose-Rack. John C. N. Gulbert, New York city.

A hose-rack consisting of the stationary shelf and swinging leaf having mitered abutting edges for sustaining the leaf in

vertical position and the hinges connecting the leaf to the front edge of the shelf formed with slops for sustaining the leaf in horizontal position.

No. 484,557.—Hose-Support. John A. C. Moore, Sewickley, Pa.

A hose-support having, in combination, a pole and a pair of spring-jaws constructed to take such a grasp on the hose as will prevent a movement of the jaws along the hose.

No. 485,129.—Apparatus for Elevating Hose. Adolph O. Muhlstein, Pittsburgh, Pa., assignor to the Muhlstein Manufacturing Co., same place.

A post or supporting frame provided with upwardly-adjustable cross arm or arms, a pulley and cord for raising and lowering said adjustable cross arm or arms, and a series of loosely-pivoted rings or hooks attached to said cross arm or arms for supporting sections of hose over and above a railway-track.

No. 484,186.—Piston-Packing. Frank N. Ethridge, Boston, Mass., assignor of one-third to George A. Peterson, same place.

A helical packing-strip of resilient-material, having a series of normally-open convolutions and presenting a true cylindrical periphery when said convolutions are closed and contracted, the end convolutions being tapered and the sides of all the convolutions, excepting the outer sides of the end convolutions, being beveled.

No. 484,190.—Hose-Band. George Ferguson, Los Angeles, Cal.

In a hose-band, the combination of a key-post arranged at one end to receive a wrench or other means adapted to apply power to rotate the post, and two parallel wire bands or hoops connected to each other at one end and provided at such end with a suitable journal arranged to encircle such post and having their other ends attached to such posts and adapted to be wound thereupon when the posts are rotated in such journal.

No. 484,298.—Device for Applying Hose-Clamps. Zebulon L. Chadbourne and Edward A. Bensinger, Brooklyn, N. Y., and Henry J. McCoy, Orange, N. J.

A pair of pliers for tightening and clamping bands for hose-couplings, consisting of the pivoted legs forming jaws and handles, each of said jaws being formed with two outwardly projecting lugs and an intermediate slot.

BICYCLE AND VEHICLE APPLIANCES.

No. 483,131.—Tire for Vehicle-Wheels. John H. Bingham, Chicago, Ill.

A vehicle tire consisting of an elastic tube and a series of cup-shaped cushions placed therein and filling the bore thereof, one-half of said cushions having their concave sides facing the rim of the wheel and the other one-half facing the tread thereof and supporting said rim-facing cushions.

No. 483,164.—Trousers-Shield. John H. Prutzman, Plankinton, S. D.

A shield for trousers, adapted to be applied at the lower portion of the fly, and consisting of a heart-shaped piece of moisture-proof material having an opening between the oppositely located duplicate portions, provided with an upper converged portion, and the device entire provided with an edge binding of tape.

No. 483,172.—Valve for Pneumatic Tires. George H. T. Schrader, New York city.

In a valve, the casing, in combination with a perforated flexible disk inclosed therein, an imperforate plug passing through the perforation in said disk, and an annular movable part surrounding said plug and constructed when moved against said disk to distend the latter and permit an outflow around said plug.

No. 483,238.—Pedal for Velocipedes. Frederick C. Rockwell, Hartford, Conn.

In combination with the crank of a velocipede, a pedal having a pair of treads supported upon hollow spindles and provided with air-chambers and valves attached to the hollow spindles, whereby the treads may be inflated.

No. 483,344.—Pneumatic Tire. James H. Bullard, Springfield, Mass.

A protective armor for a pneumatic tire, consisting of the series of thin plates or scales having slits within their borders, and a strip of flexible material connecting said scales by being interlaced through the slits thereof, and said scales having their edge portions overlapping.

No. 483,373.—Cycle-Wheel. Charles E. W. Woodward, Chicopee Falls, Mass., assignor to the Overman Wheel Co., same place.

In a wheel the combination, with a rim and a hollow rubber tire, of elastic pads or supports approximately triangular in cross-section interposed between the same on opposite sides of their centers, and whereby the tire is supported laterally and prevented from rolling.

No. 483,493.—Pneumatic Tire for Cycles. Thomas H. Hicks, Detroit, Mich., assignor of one-half to George F. Case, same place.

In a cycling-wheel, the combination, with a metal tire dished upon its periphery and having two annular marginal edges, of a tire-band stretched over the outer edges of said tire and across the dished face thereof, forming a flattened tread, and an inner annular air-chamber between said metal tire and the tire-band, said chamber bounded outwardly by said tire-band and inwardly by the metal tire.

No. 483,583.—Pneumatic Tire. Thomas W. Robertson, Dublin, Ireland.

The combination with a felly, having the side grooves or recesses of an inclosing or protective cover for a tire, composed of a woven strip with longitudinal pockets along its edges and a rubber sheet or band united to the said strip and having enlargements along its edges in which the said pockets are embedded, and wires contained in the pockets and passing through the felly and tightened so as to hold the edges of the said cover in the grooves or recesses of the felly, the said grooves being sufficiently deep to receive the enlarged edges of the cover and prevent lateral displacement of the same.

No. 483,990.—Tire for Bicycle-Wheels. George A. Burwell, Highlandville, Mass.

The combination of a hollow tire having a continuous flexible wall and outward extensions or thickened portions at the sides thereof with a wheel-rim having a receiving-groove and a seat or shoulder intermediate in the depth of said groove substantially at right-angles to the plane of rotation of the wheel, said seat-portions engaging the extensions of the tire and supporting the same against pressure toward the center of the wheel, and the said walls of the wheel-rim radially beyond said seats supporting the said extensions of the tire laterally.

No. 484,420.—Sectional Pneumatic Tire. Francis Gleason, Philadelphia, Pa.

A pneumatic tire for vehicles, consisting of separate and independent hollow sections and an inflating device connected to each of the sections and provided with means for independently closing the communication between the inflating device and each independent section.

No. 484,552.—Elastic Cushion for Hubs. John B. Gleeson, Chico, Cal.

A combined cushion and dust-guard for the hubs and axles of wheels, casters, and the like, consisting of a rubber cap or band having an inner bell-shaped end provided with an interior chamber to receive the hub or axle and a circumferential flange acting as a dust-guard.

No. 484,786.—Tire for Cycles. Thomas Fane and Charles F. Lavender, Toronto, Ont.

A tire for a wheel, consisting of an air-tube provided with the usual means of inflation, an outer tube or covering having each edge enlarged or beaded, in combination with the rim of the wheel and an annular plate located therein to grip the beaded or enlarged edges of the outer tube or covering and securely hold all parts in place, a lug cast cast on the outer side of each end of said annular plate, and a lug secured to the under side of the rim of the wheel, a tightening-nut on its outer end for the purpose of drawing the ends of said annular plate tightly together.

TRADE AND PERSONAL NOTES.

THE Boston Rubber Shoe Co. have been granted a permit for the erection of an additional four-story brick-factory building, 40 by 100 feet, on Commercial street, Malden, Mass. The estimated cost is $100,000.

—The Wirt & Knox Manufacturing Co. (Independence, Mo.) have received a large order for their all-iron hose-reels for use on the World's Columbian Exposition grounds next summer. They are building up an export trade for these reels, and state that they expect a volume of business next season double that of the past season.

—The Mattson Rubber Co. (New York) report the dress-shield business in excellent condition. The season will open during this month and the outlook is a promising one.

—What was formerly known as the Columbus (Ohio) Rubber Co. was incorporated on October 6 as The Columbus Rubber and Belting Co., with $75,000 capital. The business of the concern will continue to embrace rubber clothing, mechanical rubber, and rubber goods generally, together with a full line of mill supplies. John W. Brown is president of the company; Walter T. Brown, vice-president; Will F. Brown, secretary; and Frank N. Brown, treasurer.

—Will Jaquith, who has represented B. F. Jaquith in Wales-Goodyear rubber goods in Iowa, with headquarters in Des Moines, has retired from the road to take a house position. Hal Stopp will succeed him. The Jaquith rubber house in Des Moines is one of the largest in the West.

—C. Butler Weeks, of Cedar Rapids, Iowa, reports a steady growth in the rubber-goods trade. He has sold 500 cases of rubber shoes from one house within a year.

—E. H. Cutter, of the Woonsocket Rubber Co., sailed for Europe on October 19 by the *Majestic*, intending to be absent for a month on a business errand.

—This paragraph appears in a Pittsburgh paper: "Messrs. H. G. Tippet and G. Jager, Jr., of Liverpool, England, stopped at the Anderson last evening [October 16] on the way home from the West. They have been making a tour of this country for the purpose of selecting some city wherein to promote their business, that of rubber-manufacturing. They go to Wheeling to-day. Mr. Jager expresses a liking for this country, and, while he says he has no city selected, is coming back to this country soon again."

—Perry & McKenney, shoe dealers at Saco, Me., are adding another room to their store, to be occupied as a rubber department.

—Messrs. Howlett Brothers, the well-known rubber merchants of Rochester, N. Y., have a great trade in mackintoshes. These garments are very popular in the Flour City, and the fact that the weather is dry and clear does not keep the natives from wearing the stylish cape overcoat. For night-wear, over a dress suit, there is nothing so sensible and satisfactory as a rubber-lined overcoat, it being warm, light, and a complete excluder of the biting winds for which the cities on the lakes and in the North are generally noted.

—The Crescent Insulated Wire and Cable Co. (Trenton, N. J.) are adding new machines to their plant, their wire having become exceedingly popular.

—The Commonwealth Rubber Co., No. 54 Vesey street, New York, have sent us a new and handsome little catalogue of their line of rubber clothing, with illustrations which seem to give a very good idea of the character of the goods advertised.

—M. Preiss, recently with the Chesapeake Rubber Co. of Baltimore, and well known in the South, has accepted a position as Southern traveling salesman for the new rubber jobbers of Richmond,—Messrs. Straus, Reinhard & Co.

—William E. Wysham has returned from a long trip South, having had excellent success with the Hodgman mackintoshes, which goods he has been carrying since his departure from Baltimore, where he was many years with Messrs. Janney & Congdon.

—Pittsburgh is usually an excellent market for mechanical rubber goods, but this season has proved a disappointment to the jobbers of that city, as the labor troubles have upset the manufacturing interests of that locality greatly. But affairs are improving and the trade looks for the regular good demand in the near future.

—The old and well-known firm of Janney & Congdon, for the last fourteen years located on North Charles street, and successors to the Goodyear Rubber Co., in Baltimore, will retire from business on January 1, and the stock, good-will, and fixtures will be sold.

—As the New York *Herald*, in its advice to the winner of its liberal prize, a "trip around the world," advises the taking of a mackintosh instead of an umbrella, it would not be a bad idea perhaps, as an advertisement, for some manufacturer to present the happy plurality-guesser, when his or her name is published, with a garment to be used on the globe circuit.

—The Standard Rubber Corporation (Brockton, Mass.) are fairly snowed under with orders and are running night and day to catch up.

—The Boston Woven Hose and Rubber Co. have employed four men from the Massachusetts Institute of Technology, who are bringing their technical training to bear upon rubber problems, and at the same time learning the practical end of the business.

—The Clifton Manufacturing Co. (Boston) have all they can do in turning out fine ladies' garments this fall. Their trade this year started in earlier than usual and bids fair to last through the season.

—The Pantasote Co. (Paterson, N. J.), manufacturers of imitation-rubber cloth, are so busy that they are looking for more machinery and thinking of securing an additional plant.

—George Pierce, for many years superintendent of the Ætna Rubber Mills, Boston, has accepted the position of superintendent of the Kleinert Rubber Co. at College Point, L. I. Mr. Pierce was accounted one of the best rubber-mill superintendents in New England, and he goes with a royal recommendation from C. M. Clapp, owner of the Ætna mills.

—Lewis Elliott, superintendent of the L. Candee Rubber Co., is probably the possessor of more samples of overshoe buckles than any other man in the country, as he has kept specimens of nearly all that have ever been produced. The collection is a unique and interesting one.

—The Lambertville (N. J.) Rubber Co. are having such a call for their snag-proof boots that they are turning down orders.

—The E. H. Clapp Rubber Co. (Hanover, Mass.) have just added a Hughes & Phillips engine to their plant.

—The Chelsea Wire Fabric and Rubber Co. are having a great run on electric tape, which they seem to manufacture in so satisfactory manner that electricians buy it in preference to many others.

—Election years have usually been good years for the rubber-clothing trade, as campaign clubs have always been large buyers of rubber coats for use in parades. This year, however, owing to the fact that there has been less parading by uniformed campaign clubs, especially in the large cities, the demand has been lighter, but the class of goods called for has been of a much higher grade than heretofore, running to mackintoshes, mostly, and also to wine-colored coats with velvet collars. Several of the large rubber jobbers have sold through their customers as many as a hundred mackintoshes to the political clubs. Messrs. R. Levick's Son & Co., of Philadelphia; Daniel Klock, Jr. & Co., of Troy, N. Y.; Boyd, Jones & Co., of Baltimore; and C. F. Hamilton & Co., of Albany, N. Y., are some of the firms who have received large orders.

—The Tyer Rubber Co. (Andover, Mass.) are far behind in orders. They have lately acquired the "Marion" hot-water bottle, and are advertising it so extensively that it is already having a "boom."

—The Simplex Insulated Wire Co. have an exhibit of wire insulated with pure gum at the Mechanics' Fair in Boston.

—Mr. Bennett, known to all rubber-manufacturers as a "rubber-substitute" man, is in the employment of the F. J. Kaldenberg Co., New York.

—The Fairfield (Conn.) Rubber Co. are running one of the Corliss water-leg boilers and are exceedingly pleased with its working.

—The Monarch Rubber Co. (Brockton, Mass.) find a decided call for their waterproofing and are exceedingly busy.

—Eugene Pearl, inventor of Pearl's corset-shield, has a fine exhibit at the Boston Mechanics' Fair. The shield is attracting a great deal of attention and is selling rapidly.

—What is known as the American Chatterton compound, an insulating compound of merit, is manufactured and sold by C. S. Knowles, No. 7 Arch street, Boston.

—The Fossil Flour Co. have just started an additional plant in Nova Scotia, and will soon be prepared to fill all orders for this material.

—The Williams Rubber Co. have removed from No. 8 College place to No. 49 Crosby street, New York city, where they have more room and are more conveniently located than at the old stand. They report an excellent trade in their specialties, which include hat-covers, house-sleeves, aprons, and many others, in addition to the general line of clothing.

—The American rubber trade is advancing in every direction, the latest evidence of which is the receipt of an order for 1500 pneumatic rubber tires to be shipped to England, by the B. F. Goodrich Co., of Akron, Ohio. For several years past the rubber trade of England has been turning its attention specially to the manufacture of rubber tires, and the records of the Patent Office have been burdened with specifications of new styles. It would seem almost like shipping coals to Newcastle to send rubber tires of American manufacture to that country, especially since it is only a short time since we ceased to depend on England for the greater part of our own supply of these articles.

—New England is being canvassed by saleswomen who are disposing of a rubber-faced washboard, and it is said to sell exceedingly well.

—The Empire Rubber Co. (Trenton, N. J.) have added two large buildings to the "Star" plant, which they secured some months ago, and have moved their carriage-cloth business into them, giving up the manufacture in the mill on Stockton street.

—The Trenton (N. J.) Rubber Co. report that they have never been so busy in the fall as they are this year, as they have been running overtime continuously now for several months.

—The Standard Paint Co., with offices at No. 2 Liberty street, New York, recently had a delightful house-warming at their new factories in Bound Brook, N. J. The new buildings, 120 by 80 feet, and two stories high, were found necessary on account of the remarkable growth of their business, and are devoted to the insulating material department. There were about three hundred guests present, including the fire department of the town in full uniform, and two bands of music, and all seemed to enjoy themselves. A collation was followed by speeches, toasts, and music. The plant to-day, including the departments for the manufacture of building papers, insulating materials, and ruberoid, covers about three acres.

—The Commonwealth Rubber Co., No. 54 Vesey street, New York, are having a great run on the "Commonwealth" mackintoshes.

—One of the neatest and most tasteful rubber stores in New York city is the Goodyear store, at No. 2 West Fourteenth street. It is owned by Edward M. Holt, proprietor of the United States Rubber Works. Mr. Holt is making a specialty of fine garments to order and guarantees them to be delivered within forty-eight hours. He has finished and delivered in first-class shape a lady's mackintosh in twelve hours.

—The New England Electric Club recently had an exceedingly interesting musical entertainment at their rooms on Bosworth street, Boston.

—The London Rubber Co. (Ashtabula, Ohio,) are running an Abendroth & Root boiler with which they are so delighted that Mr. Southwick talks water-tube boilers to all who are interested in steam and steam-appliances.

—F. M. Wilstach, who travels for the Davol Rubber Co. (Providence, R. I.), has just returned from a long and successful western trip.

—The Page Belting Co., of Boston, have the only exhibit of mechanical rubber goods at the Mechanics' Fair in that city this year.

—The Butler Hard Rubber Co. are having a great run on storage and primary cells made from hard rubber. The compound used is one that is made under a patent of William Kiel, who is connected with the company, and is said to have wonderful resisting qualities.

—Work in the new rubber department of the American Wringer Co. (Woonsocket, R. I.) was begun on the morning of October 26.

—The Woonsocket Rubber Co. are building a new storehouse in the vulcanizing-works yard of their factory at Millville, Mass.

—Representatives of the Apsley Rubber Co. (Hudson, Mass.) have been in Northboro, in the same State, to consider the opening of a branch shop, in case a sufficient number of girls can be secured to work at stitching garments.

—A fire in the Columbia Rubber Works (East Braintree, Mass.) on the afternoon of October 31, caused by an explosion, occasioned a loss of $200. But for the prompt action of the employés in attacking the flames serious damage might have been done.

—George E. Austin of the Imperial Rubber Co. has returned from a successful trip through Pennsylvania, New York State, and Canada, and to Chicago.

—W. Godbee, Brown & Co., rubber-men in Montreal, made an assignment on November 3. Their liabilities are reported at $44,000, with assets of $25,000.

—The Easthampton (Mass.) Rubber Thread Co. have begun the construction of an addition to their mill in the shape of a two-story brick building 200 by 50 feet, with gravel roof. Bricklaying was begun on October 24, and it is expected that the building will be completed within this month.

—The Charles River Rubber Co. have been organized in Massachusetts for the manufacture of gossamer clothing, and also rubber goods in general, by a new process. This new process is for the compounding of rubber and the reproduction of colors in figures, checks, and plaids by printing the same on a rubber surface on gossamer garments. This does away with the use of cloth cemented to rubber on the inside and is expected to furnish a light, elastic, durable garment. The officers of the company are F. W. Alger, president; George L. Gibbs, treasurer; and Daniel Harkins, superintendent. It is stated that they have purchased from the assignee of the Boston Car Spring Co. all the rubber-working plant of that concern,—which cost originally $100,000,—and that they are negotiating for the lease or purchase of the Craig mill, at South Peabody, which has been idle since the Franklin Electric Co. moved to Connecticut a year ago.

—The Standard Paint Co. (New York) were represented at the late Street Railroad Convention in Cleveland by P. H. Hover, of Chicago. The value of a patent is not readily described, but as a convention cigar went with the description, the qualities of the article were successfully exploited.

—Capt. W. L. Candee and Henry D. Stanley represented the Okonite company at the Street Railway Convention.

—C. M. McLeod & Co. (Philadelphia) have obtained the agency for the Malcolm Mills Co., of Frankford, Pa., who make cotton yarns for insulated-wire purposes.

—Tarbox, Schlick & Co. (St. Paul, Minn.) report a large sale of rubber shoes this season. They are agents for the Candee Rubber Co.

—In Cincinnati it has been the rule for wholesale druggists to ignore the sundries and toy business. The Standard Drug Co. have now fitted up a department for that purpose. The same is true of Louisville, and L. L. Bowles & Son are pioneers in this new departure there.

—Such rubber-men as have railroad companies for customers are pleased with the outlook this winter. All the roads centering at Chicago are making great preparations in the way of ordering new rolling-stock, the Illinois Central ordering 300 cars and 50 locomotives, the Chicago & Northwestern 180 cars and 40 engines, and the Lake Shore 120 cars and 30 engines. These roads will spend $7,000,000, and a respectable portion of that amount will go for steam- and air-hose, a necessity in car-equipment nowadays.

—It is rumored that the plant of the Boston Car Spring Co., now lying idle, is wanted by the Old Colony Railroad people who are planning an overhead crossing at Roxbury in place of the dangerous grade-crossing now in use.

—C. S. Knowles (Boston) equipped the Broadway Central Hotel, in New York, with its rubber matting, which is not to be wondered at, by the way, since Mr. Haynes, the hotel proprietor, is a Boston man.

—H. P. Emerson & Co. (Boston) who now own and operate the Massachusetts Rubber Co., have more than they can do on luster coats.

—The United States Gutta Percha Paint Co. (Providence, R. I.) have doubled their output within the last year.

—C. H. Gifford, of the Sturtevant Blower Co. (Boston), an expert in rubber-mill ventilation, is soon to run the Philadelphia end of the blower business.

—Retail dealers in rubber footwear, clothing, mackintoshes, are earnestly looking for more rain and reassuring one another by the statement that the ground never freezes until the springs are full.

—Colonel Dodge, president of the Boston Woven Hose and Rubber Co., has just returned from a trip through the South.

—Samuel Cabot, of Boston, whose lampblack is so largely used in the rubber trade, has one of the most artistic exhibits at the Mechanics' Fair. It represents in miniature a modern residence, and practically illustrates the fine effects secured by Cabot's shingle-stain.

—The latest circular of the B. F. Goodrich Rubber Co. (Akron, Ohio,) is fully up to their standard. It is entitled "A Fair Offer" and with originality and genuine fun, by illustrations and description, rings the changes on the country fair programme, incidentally insinuating the names of various rubber goods.

—A. Straus, manager of the New York Belting and Packing Co., has closed a contract with that company to continue with them for three years longer.

—The president and treasurer of the Cushion Car Wheel Co. (Indianapolis, Ind.) were visitors at the office of THE INDIA RUBBER WORLD recently. They report that the rubber-cushioned wheel has stood the severest tests and that it has already been adopted by a number of the leading railroads.

INDIVIDUAL MENTION.

MR. JUAN M. CEBALLOS, of the New York rubber trade, played an active part in the Columbian celebration in October. He was a member of the committee having in charge the banquet at the Lenox Lyceum with which the celebration closed.

—Mr. Joseph Banigan, of the Woonsocket Rubber Co., with his family, attended the recent World's Columbian Exposition dedicatory exercises in Chicago.

—Mr. Samuel K. Wilson, proprietor of the Globe Rubber Works, of Trenton, N. J., is chief owner of the new electric railway now successfully running in that city.

—Mr. Joseph Whitehead, formerly president of the Hamilton Rubber Co., of Trenton, N. J., is seriously ill.

—Mr. Walter G. Chase, treasurer of the Mason Regulator Co. (Boston), recently went down to the scene of the wrecking operations of the *H. M. Whitney* and got some excellent photographs of the wreck and of the divers at work.

—Mr. J. Francis Hayward, treasurer of the Cable Rubber Co. (Boston), is probably the only possessor of a complete file of the defunct *Rubber Era*.

—Mr. B. T. Morrison, treasurer of the Reading Rubber Works, recently spent four days in the Maine wilderness and had the satisfaction of killing a moose that weighed nearly a thousand pounds.

—The Hon. Frank A. Magowan, in addition to being engaged in his large rubber interests, is extremely public-spirited. One of the finest clubs in Trenton is the F. A. Magowan Marine Club, composed of boys from fifteen to eighteen years of age, who, dressed in uniform, rejoice in torchlight parades. They are always headed by the F. A. Magowan drum-corps. Mr. Magowan recently donated fifty extra suits to the Marine Club, and he pays the expenses of the drum-corps whenever the boys wish to parade.

—In the recent Republican torchlight parade in Boston a noticeable feature was a body of men known as the Apsley Guards. It is needless to say that they came from Hudson, Mass., and were supporters of the president of the Apsley Rubber Co.

—Mr. William L. Haines, treasurer of the Fossil Flour Co. (Providence, R. I.), has sailed for Europe for a three months' business trip.

—Mr. L. D. Apsley, president of the Apsley Rubber Co. (Hudson, Mass.) has the courage of his convictions; he has deposited $1000 with a Hudson bank to be forfeited if certain statements made by a political opponent concerning the pay of the help in his mill be true.

—President Watkinson, of the Colchester (Conn.) Rubber Co., is the compiler of the statement of production of rubber boots and shoes, printed on another page of this journal. It is an interesting table and will prove of value for preservation.

—The editor of THE INDIA RUBBER WORLD has received a photograph of a handsome catch of pickerel made by Messrs. J. Francis Hayward and Wheeler Cable, of Boston, on October 15. The smallest weighed 1¼ pounds and the largest 5¼. They make a particularly handsome appearance as posed for the photographer.

—George H. Appleton, fifty years old, a wealthy rubber dealer of Boston and Haverhill, Mass., committed suicide at the Narragansett Hotel, Providence, R. I., on the night of November 8, by taking laudanum.

—James A. Frith, connected as a salesman with different rubber companies for sixteen years past, and for the last two years with E. W. Holt, New York, died in October.

TRADE PUBLICATION.

A CATALOGUE that is a true work of art is being sent out from the specialties department of the B. F. Goodrich Co. (Akron, Ohio). It is devoted particularly to druggists' sundries and gives the information needed in terse language and in a business-like way that is exceedingly taking. Instead of describing the various articles, they are all shown by excellent engravings and beneath them is a simple list of the sizes and gross prices. There are one hundred illustrations in the catalogue, covering nearly the whole list of druggists' goods. There are also numerous new specialties in druggists' sundries that are controlled by patents granted to the Goodrich company, and which, therefore will be found in no other catalogue. It is worth the while of any physician or any one handling these goods to secure one of these catalogues, both for the staple goods and for those that are improvements over the older styles.

REVIEW OF THE RUBBER MARKET.

DURING the past thirty days the dealings in crude rubber have not been large, and the activity of the previous months has not been repeated. The approach of the presidential election doubtless had some effect, in curtailment, but late transactions in rubber have not been of a speculative character, and it is presumed that the liberal purchases of the manufacturers have been sufficient to meet their requirements to a large extent for the present. Business is also to some extent curtailed by the firmness in money, which recently has been quite in contrast with the ease of several months past. Arrivals have been spasmodic, on account of the cholera quarantines of Central American ports, vessels having been hampered in the discharge and reception of their cargoes. In one case a vessel was absolutely prohibited to land, and brought its cargo back to New York, whence it was shipped. This embargo has just passed entirely away.

In Centrals there has been a fair business at good prices, the feature now being a scarcity of the better grades. All arrivals are readily sold in advance, keeping the market bare of any pressure of spot offerings. In Africans there have not been large transactions, the inquiry being chiefly for the better grades.

The deliveries of Pará rubber in New York during October were 274 tons fine, 98 tons coarse, and 31 tons caucho. The stock in port October 31, was estimated at 602 tons fine, 61 tons coarse and 21 tons caucho. The visible supply of Pará rubber on October 31, compared with one month ago, and one year ago, was as follows, amounts being stated in tons:

	Nov. 1, 1891.	Nov. 1, 1892.	Oct. 1, 1892.
United States	617	663	733
Liverpool	550	647	670
Pará	210	980	535
Afloat	1,285	845	715
Total	2,662	3,135	2,653

The position one year ago was still abnormal, stocks evening themselves on account of the Vianna corner and collapse. This renders comparisons of little value. Shipments from Pará last month were of a liberal character, a large proportion having reached their destination since November 1.

A late cable from Pará gives the price of rubber at 4400 reis for Up-river and 4000 for Islands, with Exchange at 13¼d. This is equivalent to 58¼ cents in United States currency for Up-river.

The latest New York quotations are:

Pará, fine, new	66@68	Sierra Leone	24@40
Pará, fine, old	70@73	Benguela	46@47
Pará, coarse, new	45@50	Congo Ball	36@42
Pará, coarse, old	48@52	Small Ball	33@36
Caucho (Peruvian) strip	45@42	Flake, Lump and Ord.	25@26
Caucho (Peruvian) ball	51@56	Mozambique, red ball	——
Mangabeira, sheet	36@40	Mozambique, white ball	——
Esmeralda, sausage	50@51	Madagascar, pinky	56@58
Guayaquil, strip	40@42	Madagascar, black	40@42
Nicaragua, scrap	48@50	Borneo	28@43
Nicaragua, sheet	46@48	Gutta-percha, fine grade	1.75
Guatemala, sheet	38@43	Gutta-percha, medium	1.15
Thimbles	39	Gutta-percha, hard white	1.15
Tongues	35@40	Gutta-percha, lower sorts	nominal

In regard to the financial situation Messrs. Simpson & Beers, brokers in crude India-rubber and commercial paper, New York, advise us as follows:

"The conditions that prevailed in our money market last month have ruled in October only to a more pronounced degree; 6 @ 6½ per cent. was frequently paid for call loans. A limited amount of rubber paper was offered, and 6½ per cent. was no special attraction to our local banks, owing to the great demand for call money, and we hear of but few sales of four to six months endorsed paper at this. With the return of money from the West during November a softening in rates will doubtless take place. We quote prime single-name rubber paper 7 @ 7½ per cent., first-class double-name paper 6 @ 6½ per cent. all from four to six months to run."

The condition of trade in general has been the subject of a special investigation on the part of *Bradstreet's*, the leading commercial journal of New York. Fifty special correspondents, in nearly as many cities, having interviewed leading manufacturers and jobbers, it appears that the volume of trade has been 10 per cent. heavier during the ten months of 1892 than in a like period of 1891. *Bradstreet's* correspondent in Boston reports:

"Conditions have been favorable for the rubber boot and shoe-factories. Materials have been lower, and the consumption of goods last winter was heavier than it had been since 1888. As a result stocks were practically exhausted. The factories are now well supplied with orders. Prices are on the same basis they were a year ago. The gossamer- and rubber-clothing factories report a steadily increasing demand and output. Prices are lower, but factories have earned larger dividends."

During the past thirty days the volume of general business has been very large, the retardation natural to a number of

holidays and the excitement of the election, being very slight. Prices continue very low, but this condition of affairs has now become chronic and beyond remark. The weather during October was generally pleasant, there being rain enough, however, to keep retailers' stocks bare.

The course of business in rubber shoes and clothing has assumed a form something like this: jobbers and retailers have fallen into the habit of carrying very little stock, and the people seem to have money sufficient to supply their wants. A rainstorm comes up and the retailer disposes of his stock and leisurely gives an order for its replenishment. The factory is behind hand, generally about two or three weeks, and for a day or two everything subsides in quietude. Meanwhile another storm comes up, the consuming public wish to make immediate provision for their protection, but the retailer has no goods. An inquiry develops the fact that they cannot be had at the moment, and all are disappointed. This has got to be a regular happening in the East, and will probably continue until every one becomes disgusted and stocks up in good earnest, when the first steps of overproduction will be taken.

In clothing the demand has been excellent, but there are some signs of a lull. All through the fine weather the demand did not seem to abate, and if inclemency for a length of time should prevail the probability is that the mills would close the year with many orders unfilled. Otherwise the busy season is nearing its end.

In boots and shoes the demand is very heavy, and shipping-clerks and truckmen are very busy with generally one genial person detailed to appease irate jobbers and retailers who cannot obtain their goods promptly. It has become a custom to take what one can get and not be too critical. The demand for boots is excellent, as is also that for fine shoes. In high-cut gaiters, dealers are very short. There are few Alaskas in stock. There does not seem to be a corresponding demand with other lines for foot-holds this season.

Mechanical rubber goods were not in so good request during the last month as in September. Still the demand has been a large one for the season of year. The railroads have made large orders within the past few days, and mills are purchasing freely.

In druggists' sundries there is a fair business and an expectation of a good holiday trade.

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IMPORTS FROM PARÁ.

THE imports in detail of rubber direct from Pará at the port of New York, since our last report, have been as follows:

October 14—By steamer *Seguranca* from Pará:

	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	127,100	23,600	26,500	.....	177,200
Boston Rubber Shoe Co.	102,100	25,000	24,600	700	152,400
Reimers & Meyer	69,700	.....	42,000	.....	121,800
Lawrence, Johnson & Co.	64,600	10,100	27,500	.....	95,300
Shipton Green	39,000	3,200	17,300	.....	60,600
Otto G. Mayer & Co.	51,400	4,300	4,300	.....	55,700
Sears Commercial Co.	24,300	.....	9,600	.....	37,800
Joseph Banigan	.....	3,900	11,400	.....	11,400
Total	478,200	70,100	163,200	700	712,200

November 3.—By steamer *De Bay* from Pará:

New York Commercial Co.	217,000	31,300	83,100	.....	331,400
Reimers & Meyer	146,400	65,300	60,200	6,800	278,700
Boston Rubber Shoe Co.	44,900	30,700	40,800	6,700	123,100
Charles Ahrenfeldt & Son.	600	.....	.....	70,600	71,200
Lawrence, Johnson & Co.	14,600	6,100	39,700	200	60,600
G. Amsinck & Co	47,100	2,900	.....	.....	50,000
W. R. Grace & Co	30,400	1,800	8,300	.....	40,500
Joseph Banigan	.....	.....	32,400	.....	32,400
Sears & Co	.....	.....	.....	3,200	3,200
Total	501,000	138,100	264,500	87,500	991,000

IMPORTS OF CENTRALS.

BELOW will be found in detail the imports at New York, during October, 1892, of India-rubber from Mexico, Central America, and South America, other than Pará grades:

OCT. 3.—By the *Atlas*=Carthagena:

	POUNDS.
C. Roldan & Van Sickel	720

OCT. 4.—By the *Newport*=Colon:

[Ex *Acapulco*=Central America]

A. Marquand	600
W. Lanza & Co	2,409
J. W. Wupperman	1,026
Munoz & Esprella	206

[Ex *Imperial*=South Pacific.]

Herzel, Feltman & Co	1,000
J. M. Ceballos & Co	14,000
To order	3,800
Total	23,041

OCT. 6.—By the *Orizaba*=Vera Cruz:

Edward Burr	600
Joseph Agostini	425
Total	1,025

OCT. 6.—By the *Tyrian*=Carthagena:

Kugelmann & Co	2,400
W. R. Grace & Co	375
Total	2,775

OCT. 10.—By the *Orizaba*=Vera Cruz:

Edward A. Burr	350
Graham, Hinckley & Co	300
Total	650

OCT. 11.—By the *Syracuse*=Pernambuco:

G. Amsinck & Co	2,600
Lawrence, Johnson & Co	7,200
C. A. Jacobs	1,800
W. H. Crossman & Bro	1,150
Total	12,750

OCT. 16.—By the *City of Alexandria*=Tuxpan:

H. Marquand	600
To order	1,200
Total	1,800

OCT. 16.—By the *Colombia*=Colon:

Hoadley & Co. (Panama)	5,667
G. Amsinck & Co. (Panama)	19,200

[Ex *Serena*=South Pacific.]

J. M. Ceballos & Co	5,000

[Ex *Aconcagua*=South Pacific.]

Herzel, Feltman & Co	1,100
J. M. Ceballos & Co	5,600

[Ex *Mendoza*=South Pacific.]

J. M. Ceballos & Co	8,000
Herzel, Feltman & Co	1,600
To order	5,000

[Ex *Quito*=South Pacific]

F. G. Tomas	263
W. R. Grace & Co	7,497
Andreas & Co	6,718
G. Amsinck & Co	7,440
Flint & Co	1,590
C. Roldan & Van Sickel	4,498
To order	1,706
Total	79,879

OCT. 17.—By the *Alene*=Port Limon:

Ellinger Brothers	1,900

OCT. 19.—By the *Jason*=Central America:

O. G. Mayer & Co. (Cape Gracias)	1,350
Munoz & Esprella (Greytown)	3,200
A. P. Strout (Greytown)	4,900
Andreas & Co. (Greytown)	4,000
W. H. Crossman & Bros. (Greytown)	15,200
Total	28,650

OCT. 21.—By the *City of Pará*=Colon:

Eggers & Heinlen	680
G. Amsinck & Co. (Panama)	3,929

[Ex *Costa Rica*=Central America.]

G. Amsinck & Co	2,147
Munoz & Esprella	1,909
Hoadley & Co	4,190
S. Samper & Co	416
J. Aparicio & Co	970
J. S. Spinney	3,559
Pamares & Cushman	716
Ellinger & Bros	458
Piza, Nephews & Co	4,919

[Ex *Quito*=South Pacific.]

F. G. Pierra & Co	2,801
C. Roldan & Van Sickel	644
G. Amsinck & Co	3,500
W. R. Grace & Co	1,200
Total	31,929

OCT. 24.—By the *Yumuri*=Vera Cruz:

Graham, Hinckley & Co	850
C. Vladen	100
Total	950

OCT. 31.—By the *Newport*=Colon:

A. N. Rothoiz	162
S. L. Isaacs & Asch	127

[Ex *Panama*=Central America.]

Frederick Probst & Co	370
G. Amsinck & Co	1,113

[Ex *Mapocho*=South Pacific.]

J. M. Ceballos & Co	10,800
J. Agostini	1,183
G. Amsinck & Co	1,00
To order	6,800
Total	21,655
Total all steamers	207,715

BOSTON ARRIVALS—ALL GRADES.

OCT. 6.—By the *Roman*=Liverpool:

	POUNDS.
Reimers & Meyer, Pará, fine	6,000

OCT. 9.—By the *Scythia*=Liverpool:

Reimers & Meyer, Africans	1,600
Pará, fine	11,000

OCT. 11.—By the *Michigan*=Liverpool:

Reimers & Meyer, Africans	11,200

OCT. 13.—By the *Borderer*=London:

Reimers & Meyer, Africans	7,700
George A. Alden & Co., Africans	1,600

OCT. 16.—By the *Nessmore*=London:

Ropes, Emmerton & Co., Madagascar	3,350

OCT. 17.—By the *Anglonian*=Liverpool:

George A. Alden & Co., Africans	5,700

OCT. 17.—By the *Catalonia*=Liverpool:

Reimers & Meyer, Africans	15,000

OCT. 24.—By the *Pavonia*=Liverpool:

Reimers & Meyer, Africans	20,000

OCT. 28.—By the *Milanese*=Liverpool:

Reimers & Meyer, Africans	18,000
Total for October	100,650